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AN EMPIRICAL INVESTIGATION OF TELEPHONY IMPACT ON  
BUSINESS PERFORMANCE AND REGIONAL DEVELOPMENT:  
EVIDENCE FROM SMALL BUSINESSES IN NIGERIA

OMOWUNMI SENAMI B ADEOLA-OMOLE  
B.Sc (Ibadan) M.Sc (RGU)

A thesis submitted in partial fulfilment of the requirements of  
Robert Gordon University for the degree of Doctor of Philosophy

Department of Management  
Aberdeen Business School  
Robert Gordon University

JUNE 2013

## DECLARATION

I hereby declare that this thesis,

An empirical investigation of telephony impact on business performance and regional development: Evidence from small businesses in Nigeria

To the best of my knowledge is entirely my own work and that where any material could be constructed as the work of others, it is fully cited and referenced with appropriate acknowledgements given.

OMOWUNMI SENAMI B ADEOLA-OMOLE

JUNE 2013

## DEDICATION

To the glory of God, this thesis is dedicated to my husband, Engr. Adeola Omole, my mum, Mrs Modupe Adeyemi and my daughter, Princess Ebunoluwa Omole. Thanks for being my pillar of strength and love through the long and lonely road in completing this study.

## ABSTRACT

This thesis reports on a study conducted to investigate the nature of the relationship between increased access and use of telephony, small business performance and regional development in a developing country context. This study presents detailed evidence drawn from a sample of 198 small businesses in Nigeria. The research conceptualises and empirically tests a research model which incorporates three theories in order to connect and explain how the use of telephony by small businesses enhances business performance and contributes to regional development. This is based on the existing literature of small business development; telecommunications (increased access and use of telephony) by small business; and regional development. The research data was gathered through a questionnaire of owner-managers of small businesses. This data was supplemented by the use of photographs. The data generated was analysed using Logistic Regression techniques with the aid of SPSS V.17 statistical package. In addition, the study used Visual Data Analysis and Interviews to corroborate the outcomes of the statistical analyses. The regression results suggest that there is a statistically significant and positive relationship between the 'impact of using telephony in business processes' and enhanced business performance. In particular, it was identified that 'the extent of the influence of using telephony in the acquisition of new customers'; 'the extent of the influence of using telephony to reduce the time it takes to make important business decisions'; and 'the extent of the influence of using telephony in acquiring better market prices' are critical determinants that explains enhanced competitive advantage of small businesses. In addition, 'the extent of the influence of using telephony in the acquisition of new customers', and 'the extent of the influence of using telephony to reduce the time it takes to make important business decisions' are critical determinants that explains enhanced profitability of small businesses. This evidence is corroborated by the analysis of the visual data and textual description of the owner-managers interviewed who noted that the influence of using telephony have enhanced their business performance. Furthermore, the regression results suggest there is a statistically significant and positive relationship between the 'growth outcomes of increased access and use of telephony by small businesses' and regional development of the business location. In particular, 'the extent of influence of use of telephony by small businesses to create new jobs', 'the extent of influence of use of telephony by small businesses on improved business performance', and 'the extent of influence of use of telephony by small businesses on significant business growth' are critical determinants that explains regional development of the small business location. Finally, given the important role small businesses play in developing countries, such as Nigeria, this study help provides a clearer explanation on the nature of the relationship between increased access and use of telephony, small business performance and regional development that could be used to improve the growth of entrepreneurial activities of small businesses which are precursors of economic growth as well as improve infrastructural services such as telecommunications that are essential for regional development.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

The development of infrastructural facilities such as telecommunications has become essential for small business development in developing countries. The past decades have witnessed significant advancement in information and telecommunication technologies across the world. Moreover, these recent technological advances have occurred in conjunction with the liberalisation of the telecommunications market (Kessides, 2004), especially in developing countries. The rapid diffusion of information technologies and telecommunications and its fundamental importance to regional development (Avgerou, 1998; Gurstein, 2003; Castell, 2011), particularly within the micro and small enterprise sectors (MSEs) in developing countries (Duncombe and Heeks, 2001; Wolf, 2001; Sinha, 2005; Goodman, 2005; Abraham, 2007; Duncombe, 2007; Jensen, 2007; Aker, 2008; Donner, 2004, 2005, 2006, 2008; Morawczynski, 2008; Duncombe and Boateng, 2009; Chew, Ilaravasan and Levy, 2010), have become emerging topics in recent times.

Within the last decade, penetration of telecommunications services, predominantly telephony has increased in developing countries. However, empirical research into the effect of increased access and use of telephony on the performance of small businesses are not common, particularly in developing countries (Donner and Escobari, 2010). While it is acknowledged that research has been carried out on the use of telephony, the performance of small businesses and economic development and it has been claimed there is a strong and significant relationship existing between them as noted above, there is little empirical evidence that determines the nature of the relationship between increased access and the use of telephony, small business performance and regional development in developing countries (Duncombe and Heeks, 2002;

Rabayah and Qalawi, 2011). In contributing to the limited empirical evidence in developing countries, this study seeks to:

‘Ascertain the changing role of telecommunications for small businesses in a developing country as a consequence of the liberalisation of the telecommunications sector. It seeks to investigate how owner-managers of small businesses in Nigeria perceive the effect of increased access and use of telephony on business performance and its potential in enhancing the capability of small business to contribute to the regional development of the business location’.

This study provides evidence on the nature of the relationship between increased access and use of telephony, small business performance and regional development at the micro-level. It also captures the significance of increased access to telephony on the entrepreneurial process of small businesses as a determinant of business growth.

## 1.2 Background to the Research

The diffusion of information technology and telecommunications, such as telephony, has been rapid over the last two decades in developing countries (Sridhar and Sridhar, 2008). The increased diffusion of telephony is evident as about 5.9 billion people across the world use the telephone, including 103 million in Nigeria. While the benefits of the use of telephony are apparent to people in developed countries, who regard the telephone as fundamental to their everyday lives, they have not been so evident to people in developing countries until the recent technological advancement took place (Sadosky, 1993). Among those that have benefitted from recent technological advancement and increased investment in telecommunications are the owner-managers of small businesses whose businesses have suffered from basic infrastructural facilities like telecommunications, roads, electricity and networks. This has impacted their business performance, as well as hindered their capacity to contribute to the development of the developing economies. Before increased access and use of telephony was available in developing

countries like Nigeria, owner-managers of small businesses exchanged business information primarily through physical contact i.e. face to face meetings wherein they had to make costly journeys for business purposes (Chell and Baines, 2000; Duncombe, 2007). Initially, only the privileged benefitted from the increased penetration of telephony in Nigeria (Abraham, 2007), however, recently more people, particularly owner-managers of small businesses, have enjoyed increased access to telephony because of greater competition among operating telecommunications companies which has led to the drop in SIM card prices in Nigeria.

The role of resource tools like telephony, which can facilitate businesses to become competitive, cannot be over-emphasised in this era of globalisation and economic competitiveness (Guber, 2001; Qiang, Pitt and Ayers, 2004). In developing countries, such as Nigeria, small businesses suffer from inadequate access to vital business information, which is fundamental in influencing the crucial business decisions, thereby giving rise to information asymmetries, and rendering markets inefficient. Moreover, it also reduces the ability of small businesses to contribute to the development of the economy at the micro-level. According to Jensen (2007) and Donner and Escobari (2010), telephony plays a significant role in reducing information asymmetries.

Qiang, Pitt and Ayers (2004) believe that, the diffusion of information technology and telecommunications, such as telephony, have the potential to create new markets, new products, significantly reorganise how goods and services are created and distributed, as well as present new ways of providing services to the society. In particular, these potential outcomes of increased access to telecommunications, especially within small businesses, have been stated to have long-term effects in contributing to the micro-growth of developing economies through foreign investments, job creation and income distribution (Hallberg, 2000). Hence, by identifying these potential growth outcomes through increased access to telephony in Nigeria, it would be beneficial to investigate the relationship of how the use of telephony by small businesses in Nigeria enhances

business performance and their capacity to contribute to the development of their business location.

The determinants of small firm growth have been extensively dealt with in researches over the last decades (Variyam and Kraybill, 1992; Storey, 1994; Glancey, 1998; Praag, 2003; Davidsson et al., 2007; Okpara and Wynn, 2007; Acs and Kallas, 2008). One of the determinants identified in the literature is access and use of information and communication technologies (Poon and Swatman, 1999; Thurik and Wennekers, 2004; Freel and Robson, 2004; Ilavarasan and Levy, 2012); particularly telephony which is commonly used by small businesses (Premkumar and Roberts, 1999; Duncombe and Heeks, 2001; Donner, 2004; Donner and Escobar, 2010). The significant role information and communication technology plays as a determinant of firm growth has attracted the attention of policy makers in developing policies that promote its efficiency. The liberalisation of the telecommunications market has been particularly successful around the world with regard to the policies developed to promote universal access and the efficiency of telecommunications services. In developing economies, for example Nigeria, the liberalisation of the telecommunications market has increased the supply of telecommunications services which have suffered from many decades of inefficiency and poor infrastructural investment. The liberalisation of the telecommunications sector, which rapidly extended throughout developing countries, resulted in greater investment from telecommunications operators, led to the provision of affordable telecommunications services and increased the public's access to timely information.

Micro and small enterprises (MSEs) which are generally regarded as small businesses in developing countries (Mead and Liedholm, 1998; Nickter and Goldmark, 2009); have been recognised across the globe as playing an important role in the economy (Thurik and Wennekers, 2004). Small businesses accounted for 58.8% of total employment in the UK economy in 2011 (Business Population Estimates, 2011), 50% of total employment in the Nigerian economy in 2011 (National Bureau of Statistics, 2011).

The growth of small businesses is dependent on a chain of favourable government policies, improved infrastructural services and enhanced business skills. The Global Entrepreneurship Monitor (GEM), a leading consortium in entrepreneurship research, states in its executive report and cited by Bosma and Levie (2010), that quality infrastructure such as telecommunications is highly significant in promoting entrepreneurship growth in developing countries. Telephony is the most common infrastructure available to a large population in developing countries and it is predominantly the most common form of information technology used by small businesses in exchanging vital information that facilitates business growth (Donner and Escobari, 2010). Thus, it is a worthwhile initiative to explore the entrepreneurial processes of small businesses in Nigeria and the mechanisms behind using telephony in facilitating business growth in Nigeria.

This study seeks to show that the recent liberalisation of the telecommunications sector in Nigeria has increased the supply of telephony particularly among owner-managers of small businesses; and the extent to which the availability and affordability of telephony are crucial in increasing the ability of the small businesses to use telephony in facilitating the process of collecting, managing and distributing business related information that are important in enhancing their capacity to link with new markets and business networks.

In addition, this study seeks to demonstrate that the use of telephony by small businesses in Nigeria is having a significant influence in business processes, such as the acquisition of new customers, less time to make important business decisions, acquiring better market prices, reducing operational costs and increasing sales and marketing strategy. These factors will eventually enhance the business performance in terms of competitive advantage and profitability, as well as generate growth outcomes such as the creation of jobs, improved business performance, improved service provision and significant business growth that will enhance the capability of the small businesses to contribute to the regional development of their business location.

### 1.3 Research Aim and Objectives

The limited empirical evidence on the nature of the relationship between increased access and use of telephony, small business performance and regional development in developing countries implies that policy makers in developing countries do not have adequate and appropriate information that would enable them to develop suitable policies that could boost small business development and performance, increase telecommunications infrastructure investment and promotes regional development. Thus, this study is designed to provide empirical evidence showing the influence of telephony on business performance and regional development at the micro-level and could contribute towards the development of policies that would be linked to the economic and social benefits of increased penetration of telecommunications in developing countries.

The overall aim of this study is to:

‘Ascertain the changing role of telecommunications for small businesses in a developing country as a consequence of the liberalisation of the telecommunications sector. It seeks to investigate how owner-managers of small businesses in Nigeria perceive the effect of increased access and use of telephony on business performance and its potential in enhancing the capability of the small business to contribute to the regional development of the business location’.

The specific objectives of the study are as follows:

- To explore how the entrepreneurial process of small businesses and increased access to telephony enhances business growth in Nigeria.

The findings will contribute towards an understanding of the motivations behind owner-managers of small businesses creating business. In addition, it will explain the mechanisms involved in using telephony to facilitate small business survival and growth from a developing economy perspective.

- To evaluate the perception owner-managers of small businesses have on the extent of increased access and use of telephony in Nigeria.

The findings will contribute towards an assessment of the consequences of the liberalisation of the telecommunications sector with regards to its effect on small businesses' owner-managers' perception of increased access and use of telephony. In addition, the findings will contribute towards the development of policies and regulatory enforcement in relation to universal access to information and communication technology.

- To explore the usage pattern of telephony by owner-managers of small businesses in Nigeria, in order to show that the contribution of increased access to telephony has enhanced the ability of small businesses to link with new markets and business networks.

The findings will contribute towards an understanding on the process of interactions involved between small business and networks in facilitating business start-up and growth from a developing country perspective.

- To explore how the use of telephony in business processes enhances small business performance in Nigeria.

The findings will contribute towards an understanding of how the use of telephony enhances small business performance in developing countries. A qualitative approach will help illustrate the statistical findings and extend the current thinking on the influence of using telephony in business processes to enhance business performance.

- To demonstrate that growth outcomes generated by the use of telephony in small businesses can enhance the capability of small businesses in Nigeria to contribute to the regional development of the business location in which they operate.

The findings will contribute towards an evaluation of the influence of small businesses using telephony. It will also help explain how the growth outcomes, generated as a result of the small businesses using telephony,

facilitate the regional development of the business location in which they operate. In addition, the findings will contribute towards the development of policies that support small business growth and promote regional development in developing countries.

In particular, in an attempt to ascertain how owner-managers of small businesses in Nigeria perceive the effect of increased access and use of telephony on business performance and its potential in enhancing the capability of the small business to contribute to the regional development of the business location, the following hypotheses have been put forward to guide this study.

H<sub>1</sub>: The integration of telephony into business processes will depend on the extent of increased access to and use of telephony by small business owner-managers in Nigeria

- H<sub>1a</sub>: The extent of increased access to telephony for small businesses varies between rural and urban areas in Nigeria
- H<sub>1b</sub>: The extent of the effect of using telephony in business processes varies between rural and urban areas in Nigeria
- H<sub>1c</sub>: The extent of growth outcomes of increased access to and use of telephony by small businesses varies between rural and urban areas in Nigeria

H<sub>2</sub>: The influence of using telephony in business processes can significantly and positively predict enhanced small business performance in Nigeria

- H<sub>2a</sub>: The influence of using telephony in business processes can significantly and positively predict enhanced competitive advantage of small business in Nigeria.
- H<sub>2b</sub>: The influence of using telephony in business processes can significantly and positively predict enhanced profitability of small business in Nigeria.

H<sub>3</sub>: The growth outcomes of increased access and use of telephony by small businesses in Nigeria can significantly and positively contribute to the development of the region of the business location.

- H<sub>3a</sub>: The creation of jobs by small businesses in Nigeria as a consequence of increased access and use of telephony can significantly and positively contribute to the development of the region of the business location.
- H<sub>3b</sub>: The improved performance of small businesses in Nigeria as a consequence of increased access and use of telephony can significantly and positively contribute to the development of the region of the business location.
- H<sub>3c</sub>: The significant growth of small businesses in Nigeria as a consequence of increased access and use of telephony can significantly and positively contribute to the development of the region of the business location.
- H<sub>3d</sub>: The improved service provision of small businesses in Nigeria as a consequence of increased access and use of telephony can significantly and positively contribute to the development of the region of the business location.

The findings suggest that the influence of using telephony in business processes has a significant impact on enhanced business performance in Nigeria. It also suggests that the growth outcomes of having increased access to and use of telephony by small businesses in Nigeria has a significant impact in contributing to the regional development of the business location.

#### 1.4 Overview of the Methodology

This research adopted a research methodology which describes the nature of the study in terms of its research approach, data collection techniques and instruments. The research approach chosen indicates a sequential mixed method approach, which involves sequentially using a quantitative and qualitative approach. The sequential mixed method resulted in the sub-division of the study into two, wherein the quantitative data are analysed quantitatively and the qualitative data are analysed qualitatively, in order to illustrate the findings and obtain a holistic view of the influence of telephony on business performance and regional development.

The quantitative part of the study is aimed at identifying tools for answering the research hypotheses, as well as gaining insights into the hypothesised relationship presented in Section 1.3 above. A conceptual framework was first developed based on the existing literature, which is then transformed into a research model using three theories (the theory of entrepreneurship, theory of business growth and theory of economic growth), in order to connect and explain how the use of telephony enhances small business performance and contributes to regional development of the business location. The study adopts the survey strategy, using a carefully designed questionnaire to collect data from a random sample of 198 owner-managers of small businesses in urban and rural areas of Nigeria. The collected data are then analysed using logistic regression techniques to test the hypothesised relationship in the research model using the SPSS 17 statistical package. These statistical methods are adapted to meet the objectives of the study.

The aim of the qualitative part of the study is to help corroborate the statistical findings of the quantitative section. It involves analysing interviews and visual data (five still photographs) collected during fieldwork in Nigeria.

## 1.5 Contribution to knowledge

There are four main contributions made by this study. Firstly, this thesis contributes to the theories relevant to the impact of telephony on small business performance and regional development of the business location. The study uses three theories (the theories of economic growth, entrepreneurship and business growth) to connect and explain the key concepts of the study; entrepreneurship and small businesses (the influence of using telephony in business processes to enhance business performance of small businesses), small business location, telecommunications (increased access and use of telephony) by small business and regional development (the growth outcomes of increased access and use of telephony in business) in Nigeria. The combination of these theories leads to the development of the conceptual framework and research model. The statistical analyses of the results also lead to the development of theoretical interpretation that supports certain aspects of the theories relating to the influence telephony has on small business performance and regional development of the business location in a developing economy context.

Secondly, the thesis also provides a methodological extension to prior studies on the influence of telephony on small business performance and regional development because it incorporates and operationalises two variables 'the influence of using telephony in business processes' as an explanatory variable of enhanced business performance and 'growth outcomes of increased access and the use of telephony by small businesses' as an explanatory variable of regional development of the business location. The variable 'influence of using telephony in business processes' is adapted within the context of small businesses and the use of the telephone is seen as a mediated communication technology in carrying out the basic task of running a business in order to enhance business performance; while the variable 'growth outcomes of increased access and the use of telephony by small businesses' is adapted within the context of small businesses, in relation to the outcomes of increased access and use of telephony which have the potential to contribute to the

micro-growth of the business location. These adapted variables help to explore the reality of the relationship tested, according to the methods used. The qualitative approach illustrates the interpretation of the statistical findings.

Thirdly, the thesis provides a comparative analysis of the perception of the owner-managers of small businesses with increased access and use of telephony across two regions (urban and rural areas), which helps to assess the effect that the liberalisation of the telecommunications sector has had from a developing economy perspective. Comparing the findings between the two regions should help determine the extent of the impact of increased access and use of telephony in each region, as well as to help provide suggestions in relation to possible improvements on universal access to information and communication technology.

Finally, the thesis provides a relationship analysis between the use of telephony by small businesses, business performance and regional development. Analyses of the statistical results on the relationships tested will help provide suggestions in relation to improvements in policies that support small business development and promote regional development.

## 1.6 Limitations

This study focuses primarily on the changing role of telecommunications in small businesses in a developing country, following the liberalisation of the telecommunications sector in Nigeria. The nature of the sample and the subjective nature of the measures used in the questionnaire may be prone to biases, which necessitates that care should be taken when generalising the results of the study. Selecting a truly random sample was a particularly demanding task for the researcher, but was necessary in order to ensure that a representative sample of the target population was used in the survey as there was no available information with regards to the number of small businesses. The researcher had to visit the regions under study had identified the different types of businesses operating within each region, As such, this study made use of a generated based

data. In addition, the sample used in this study did not include small businesses without access to telephony. In relation to time constraints on the side of the researcher during the data collection process, field assistants were employed as well as incentives were given to motivate the respondents to fill in the questionnaires.

Given that this thesis makes use of a perception-based questionnaire with reference to the recent liberalisation of the telecommunications sector, caution should be taken when generalising the findings to the small business population in Nigeria and other developing countries over time. Most of the small businesses used in this study were mainly formal businesses and care should be taken in generalising the results in relation to informal businesses.

In relation to the qualitative approach used in this study, responses from the semi-structured interviewed were gathered from the same respondents that were surveyed with the use of the questionnaire. The relevant findings therefore should be regarded as an extension an illustration of the findings of the quantitative approach. In addition, due to time constraints, few respondents were randomly selected to conduct the semi-structure interview.

## 1.7 Definitions

Given that researchers often do not use the same definition for certain words, the following key words are defined in order to establish the position taken in this study:

- Nigeria: A developing country purposefully chosen for the study. It is situated in West Africa with the geographical coordinates of 10 00 N, 8 00 E bordering the Republic of Benin in the west, Chad and Cameron in the east, Niger in the north and Gulf of Guinea in the south.

- Developing economies: This refers to any country categorised by the World Bank and international organisations as a low income earning country.
- Small Businesses: This refers to businesses with less than ten employees. This definition is the subjective view of the study participants within the context of the chosen study location.
- Liberalisation of the Telecommunications sector: this refers to the opening up of the telecommunications markets to improve the efficiency of telecommunications services, thereby providing consumers with increased, more advanced, modern and affordable telephony services.
- Telephony: This refers to the telecommunications services provided by telecommunications operators through the use of the telephone (mobile and landline).
- Enhanced Business performance: This refers to the subjective view of the owner-managers of small businesses, in terms of improvements in competitive advantage and profitability.
- Influence of using telephony in business processes: This refers to the degree to which business information exchanged via telephony by the owner-managers of small businesses has an effect on the business process.
- Growth outcome of increased access and the use of telephony: This refers to the resulting effect that is generated as a result of owner-managers of small businesses having increased access and using telephony in carrying out their business activities.

## 1.8 Structure of the Thesis

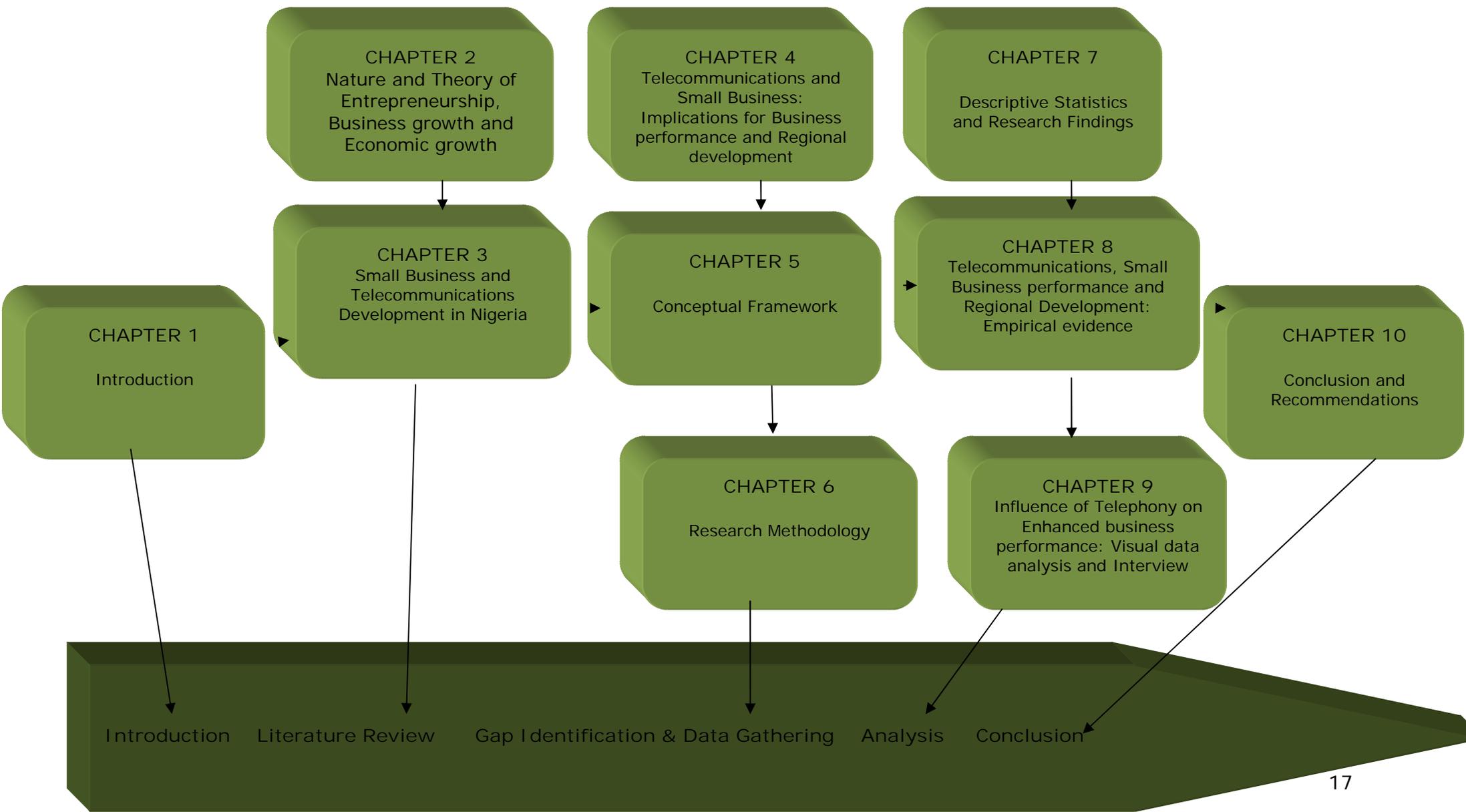
The rest of the thesis is organised as follows:

- Chapter Two: This chapter reviews the theories that are used in explaining and connecting the key concepts of the study. It also outlines the role of information and communication technology and networking in small businesses.
- Chapter Three: This looks at historic and economic perspectives on the development of small businesses and the telecommunications sector in Nigeria. It provides an historical description on the development of small businesses, and the reform process, as well as the restructuring of the telecommunications sector in Nigeria.
- Chapter Four: This chapter looks at the theoretical perspectives that govern the relationship between the key concepts of the study. It outlines a theoretical framework that guides the development of the key concepts that inform the nature of the relationship between increased access and use of telephony; small business location; enhanced business performance of small businesses and the growth outcomes of increased access and use of telephony in small businesses.
- Chapter Five: This chapter deals with the conceptual framework and research model. The literature reviewed and theories related to the key study concepts are conceptualised to develop the conceptual framework, which is then transformed into a research model in which all the variables of interest to the study were defined.
- Chapter Six: This chapter discusses the methodology of the study. It provides the framework with regards to the research approach and for the collection and analysis of the research data.
- Chapters Seven and Eight: These chapters present the results of the descriptive and multivariate statistical analyses. They also

provide answers to the research questions as well as the research hypotheses.

- Chapter Nine: This chapter presents the analysis of the telephone interview and visual data in relation to one of the research objectives.
- Chapter Ten: This chapter deals with the conclusion of the whole thesis by assessing if the objectives of the research have been achieved. It revisits the research questions in order to provide concise answers and highlights the main findings of the study. The chapter outlines the study's contribution to theory and practice and makes recommendations for future studies.

Figure 1.1: Structure of the Thesis



## 1.9 Conclusion

This study extends the current understanding on the nature of the relationship between increased access and the use of telephony, small business performance and regional development at the micro-level. Given the dearth of empirical knowledge on the use of telephony as a determinant of enhanced business performance and regional development, this study contributes to the literature on entrepreneurship, business growth and regional development by providing empirical evidence on how the innovative use of telephony by owner-managers of small businesses enhances business performance, as well as facilitates their capacity to contribute to the regional development of the business location they operate.

CHAPTER 2  
NATURE AND THEORIES OF ENTREPRENEURSHIP, BUSINESS  
GROWTH AND ECONOMIC GROWTH

2.1 Introduction

A general framework of the study was presented in Chapter One. The main purpose of this chapter is to set the scene relevant to the subject of this thesis in order to provide context that is critical in explaining the relationship between telecommunications, small business performance and regional development. This chapter also reviews the theories of entrepreneurship, business growth and economic growth in order to present the theoretical framework that connects the key concepts of this study. In particular, it focuses on the theoretical and philosophical perspectives of existing literature. The chapter is structured as follows. Section 2.2 highlights the theories of economic growth. Section 2.3 discusses the theory of entrepreneurship. Section 2.4 describes the concept of small businesses. Section 2.5 explains the importance of small business to economic development. Section 2.6 explains the role of networking in small business. Section 2.7 discusses information and communication technology in small businesses. Section 2.8 provides a summary to the chapter.

2.2 Theories of Economic Growth/ Development

Most governments of both developed and developing countries are primarily concerned with the process of economic growth or development of their countries. In developed countries, economic growth is crucial in monitoring unemployment and other economic factors that may affect the living standard of the people; while in developing countries, economic development is necessary to transform and alleviate poverty, reduce unemployment as well as improve the populace's standard of living. Poverty is a major issue in many developing countries (African development Reports, 1998; 2004; 2007; World Development Report,

2008; 2009) and as such this has led to the disparity between developed and developing economies and has become a basis for concern for the leaders of developed and developing countries. In addition, multilateral institutions such as the World Bank and IMF are also concerned and have attempted to find solutions to the disparity in incomes as well as widespread poverty (Todaro, 1995; Barro-Robert, 1997; Roe, 2003). Economic growth is regarded as a quantitative change in production. It is assumed that an economy of a country grows through an increase in the level of production as well as an increase in the availability of goods and services for consumption. According to Jhingan (2005), economic growth is referred to as the quantitative sustained increase in a country's labour force, consumption capital and volume of trade.

Furthermore, Kuznets (1965) described economic growth as a continuing increase in capacity to supply increasingly various economic goods to its people (Acemoglu, 2012). The continuing increase in capacity is based on demand for institutional and ideological changes as well as advanced technology. Economic growth and economic development are often used interchangeably by economists, although Maddison (2007) tried to make a distinction between them by stating that an increase in income levels is regarded as economic growth in developed economies, while it is regarded as economic development in developing economies. This study focuses on how micro-economic growth can be achieved in a developing country; however features of development will also be discussed.

### 2.2.1 Characteristics of Developing countries

The economic indicators of underdevelopment provide the characteristics of developing countries (Stillwagon 1998; Easterly, 2007). The economic indicators include low incomes, unemployment, underdeveloped natural resources, dual economy and insufficient capital equipment and technological backwardness. Thus, the economic growth models seek to transform these economic indicators in developing countries and each are discussed in turn.

## Low Incomes

Most developing countries, including Nigeria, are poverty ridden. The Gross National Product (GNP) per capita of these countries is generally low. According to the World Development Reports (2004; 2005; 2007); developing countries have a higher percentage of the world population and yet countries with a smaller population produce more than developing countries. The overall percentage of the developing world living on less than \$1.25 a day is 22%, which means 1.29 billion people live on less than \$1.25 a day and 2.47 billion people live on less than US\$2 per day with the majority of these people living in Africa and Asia (World Development Report, 2008). When measuring poverty indicators, absolute poverty makes more sense in understanding the nature and magnitude of poverty. Low income alone does not reflect absolute poverty; other factors for example ill health, inadequate clothing, poor shelter, lack of education and malnutrition also reflect poverty. Most people in developing countries generally have a low standard of living and spend most of their income on food, have inadequate clothing, unsafe drinking water and limited access to education (World Development Report, 2008; African Development Indicators, 2009). Recent studies in Nigeria, part of a World Bank Study, showed that although the country is a rich-resource country it is a low income country with many poor people (Informing the poor: four Critiques; World Development Report, 2010).

## Unemployment

The industrial sector in developing countries is small and not really expanding; as such jobs are not being created in adequate numbers to address the increasing population. As the population moves from rural to urban areas, with many people having increased access to education, unemployment becomes an inevitable feature among the educated labour force in developing countries. Agricultural farms in rural areas are small and a large number of people live on them. As a result of the seasonality of farming operations, as well as the ineffective use of other resources,

many people living in rural areas appear to be unemployed as their yield is less than they can produce, even after working a minimum of eight hours per day. Accurate and complete information on employment in Africa is sparse and where data is available it reveals that the unemployment rate is extremely high; for example the unemployment rate is 17.8% in Botswana; 51.2% in Namibia; 25.2% in South Africa; and 23.9% in Nigeria (African Development Report, 2004; 2007; African Development Indicators, 2011).

#### Insufficient capital equipment and technological backwardness

Developing countries are mainly employed in agricultural production and generally use crude methods to weed, while harvesting is usually done manually. Many factories are labour intensive, with many using human labour, hence, there is an inefficient use of capital equipment. These factors lead to inefficient production, low wages, as well as the inability to invest in capital equipment and productive sectors. Inadequate capital equipment will therefore result in inefficient production, low output, high cost of production, low incomes, thereby creating a vicious circle (Killick, 1993; Obadan and Odusola, 2000).

#### Undeveloped Natural Resources

Most developing countries usually have undeveloped and underutilised natural resources. Natural resources such as land, water, minerals are usually drained off by privileged citizens, or those in political power and the country in which they are mined do not see the benefit (Collier, 1997; World Development Report, 2003; 2008; 2009). Many of the natural resources are undeveloped because of their inaccessibility or the lack of technological equipment or capital to exploit the resources. As a result, natural resources are wasted as they are not utilised for the benefit of the population. Developing countries are characterised by inactivity, labour inefficiency and a certain degree of specialisation, which eventually results

in low wages and low output. Compared to developed countries, the quality and quantity of goods consumed in developing countries is poor, the means of production are out-dated and inadequate and consumer products are produced using low level technology (World Development Reports, 2007; 2008).

### Demographic features

A rapidly increasing population is one of the main features of a developing country (Cohen, 2006). Birth rates in developing countries are relatively high and due to development in medical sciences, mortality rates have sharply declined. As a result, the growth rate in the population of these countries has increased. According to the African Development Report (2010), life expectancy in Africa rose from 52.7 years to 56 years between 1990 and 2010, while infant mortality rates have declined by 25% in the same period. In 1960, Africa had a population of 280 million which represented 9% of the world's population. As at 1997, the population was 758 million approximately 13% of the world's population and it is estimated that by 2050, Africa's population will be 2.3billion. The average growth rate is 2.8% (African Development Report, 2010). The rapid increase in the population of developing countries has had an impact on available resources, particularly in conditions where production is low, thereby leading to low incomes. Low wages and a large number of dependants deny people the basic necessities of life and lead to poor standards of living; thereby the resultant effect is mass poverty.

Moreover, the high prevalence of the Human Immunodeficiency Virus (HIV), as well as Acquired Immune Deficiency Syndrome (AIDS), have compounded the problems of developing countries, as many of the working class have died, reducing labour productivity and increasing the cost of health care in poverty stricken economies (Collier, 1997; African Development Report, 1998; 2004; 2007; 2010).

## Dual economy

Most developing countries have a subsistence economy and a market economy. The subsistence economy is usually rural based, underdeveloped and primarily agricultural, while the market economy is urbanised with all the modern facilities of life including, mobile phones, computers, new models of cars and high buildings. The subsistence economy engages in agricultural production by using crude techniques. According to World Development report (2009), the majority of the population, about 80% in developing countries, live in rural areas without even basic amenities for sustainable living.

The economic indicators characterising developing countries, as discussed above, have raised concern among leaders of both developed and developing countries, including multinational organizations. These conditions need to be addressed and eliminated in order to create a more equitable world. Thus, the economies of developing countries must grow for this to be achievable. Hence, economic growth is of great significance in developing economies. The reality is that while a number of economies, such as developed countries, enjoy a high standard of living and have access to the basic necessities of life, others do not. As such, the need to stimulate growth in developing countries becomes fundamental. Although, significant effort has gone into the process of stimulating growth in developing countries, little has been achieved. The issue is what can be done and who can help stimulate this growth. This is one of the gaps the study seeks to address.

Over the years, many economists have used different theories to explain economic growth. Those who pioneered the economic growth theory include Adam Smith, David Ricardo, Robert Solow, Trevor Swan and Schumpeter. Other growth theorists include Harold, Domar and more recently, Paul Romer and Robert Lucas. The theorists are classified into various schools of thought and they include classical, neo-classical and endogenous growth theories. The discussion below reviews the conventional theories of economic growth, including the ones that introduced the entrepreneur as a facilitator of economic growth.

### 2.2.2 Classical Theory of Economic Growth

The classical theory focused mainly on the expansion of production factors such as land, capital and labour. The classical theorists were concerned with understanding the process of surplus and accumulation, which in turn results in an increase in national growth. According to Adam Smith (1776), availability of an adequate market will provide the basis for accumulation of capital, as well as a division of labour, thereby giving rise to an increase in productivity levels. As such, economic growth is determined by labour and capital.

Another classical economist, David Ricardo described the concept of diminishing returns fundamental to growth and explained how additional investment in land would yield lower returns, thereby hindering economic growth (Gupta, 2009). In addition, Malthus argued that economic development would be hindered due to the limited availability of land. He also envisaged that the natural equilibrium in labour wages would be hampered at subsistence levels, as a consequence of the interaction between labour supply, agricultural production and the wage system (Cypher and Dietz, 2008). Furthermore, Harrod and Domar explained how labour expansion could lead to a decline in the accumulation of capital per worker, which in turn will lower the productivity of the worker, as well as lower income per person, thereby resulting in economic decline (Aghion, Comin and Howiit, 2006). Based on these reasons, classical economists did not anticipate any sustainable economic growth, due to inadequate resources and thus failed to integrate the effect of technology on economic growth which might provide greater efficiencies in production and better returns on inputs of land, capital and labour.

In particular, the classical economists did not recognise the role of entrepreneurs in economic growth, but they argued that the role of government in business hinders economic growth. They explained that economic growth is determined by allowing market forces - 'laissez faire', to operate freely and uninterrupted as this might lead to the creation of wealth and efficient use of resources. It was on this basis that economic reform began in many countries around the world in the early 1980s,

starting with Ronald Reagan of the United States of America and Margaret Thatcher of the United Kingdom.

### 2.2.3 Neo-classical Theory of Economic Growth

The thoughts of neo-classical theorists, such as Cassel and Marshall, are not entirely different from those of the classical theorist as they also stressed that creating an appropriate climate is an essential factor in strengthening the interplay of free market forces in order to bring about economic growth. In this regard, the neo-classical theories incorporated technology into the production function, while demonstrating that economic growth is sustainable, unlike the thoughts of the classical theorist (Ayres, 1997). The neo-classical economists presumed that everybody had access to information required for decision making, as information is assumed to stimulate growth as well as raise productivity (Wong, Ho and Autio, 2005).

A leading neo-classical economist Robert Solow built a model for economic growth. The model featured a closed economy with a comparative market, as well as a production technology which showed evidence of diminishing returns to capital and labour and constant returns to all input. The model presented by Solow (1957) has an exceptional steady-state growth path in which all the input and output grow at the same rate. The steady-state growth rate is the exogenous growth rate of workers and the output per worker is constant alongside the steady state with the given technology. In this model, technology development is exogenously determined and accounts for growth in output per capita. Therefore, neo-classical models generally demonstrate that technology development has a greater impact on economic growth than the contributions from increasing quantities of productive factors (Barber, 2009).

The growth model provided by Solow (1957), presented the production function;

$$Y=F (K,L,t)$$

Where Y is the aggregate production, K is the amount of capital, L is the labour employed in production and t is time period. The derivative of Y over a period of time is presumed to be non-negative and this reflects the growth in an economy. The model depicts an economy in perfect competition, whose output grows in response to large inputs of capital and labour. The economy obeys the law of diminishing returns with each new bit of capital yielding a slightly lower return than the initial one, provided labour supply is fixed. One implication of this assumption is that as the capital stock increases, growth slows down and in the long run stops. Thus, for the economy to grow there has to be constant infusion of technological progress. Solow's growth model is based on technology development or the accumulation of knowledge contributed by labour, but the entrepreneur has no role. The inclusion of technological progress to the equation of the production function is;

$$Y(t) = F[K(t), A(t), L(t)]$$

Where Y is aggregate production, K is capital stock, L is labour and A is technology factor. t represents the accumulation of knowledge and this model takes into account the technological progress, thus its change is independent from any economic variables. The assumption of diminishing returns implies that the growth of aggregate production could not be accounted for by the growth of inputted factors. Thus, it is assumed there would be large residuals on aggregate production estimation caused by the increase in technological progress, which the neo-classical model does not explain.

Exogenous sources, savings and technological progress explain the growth in Solow's model. A further implication of this model's assumption is that poorer economies with a lower initial level of capital to start with, have a tendency to have higher returns and higher growth rates, thereby allowing them to catch up with richer economies and converge with them in the long-run. Hence, the growth of developing economies would be rapid over a period of time, after which it would slow down when the gap between the developing and developed economies has disappeared.

However, based on this model, the performances of most countries are not consistent. The available data on average growth rates figures that exist for seven<sup>1</sup> rich countries was able to prove this inconsistency (Barro and Sala-Imartine, 1995). Barro and Sala-Imartine (1995) and Barro (1997), argued that modern growth rates are well above their earlier long-run averages. The rich economies exhibited higher growth rates even during the 1970s when growth slowed down. Hence, these results disagree with the assumption of the Solow growth model that growth will slow down over a period of time. It also contradicts the assumption that poorer economies will catch up with the richer economies. Barro and Sala-Imartine (1995) reported that on average poorer economies grew slowly, which contradicts Solow's assumption that poorer countries have higher growth rates.

William Baumol, another neo-classical theorist was among the first economists to consider the role of entrepreneurship in economic development. According to Baumol (2002), growth cannot be explained by the accumulation of production factors only; human creativity and entrepreneurship are required to combine inputs in a productive way (Eliasson and Henrekson, 2004).

Furthermore, Baumol (2002) stated that the traditional factors of labour which were introduced by Romer (1986), capital and knowledge, were important in determining production, but their capacity to harness new ideas was also significant, which suggests the beneficial role of the entrepreneur. Baumol (2002) and Baumol and Strom (2007) argued that entrepreneurial activities accounted for a significant amount of growth which is not explained in previous production functions. This model fits into the endogenous theory of economic growth.

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<sup>1</sup> These countries are the United Kingdom, Germany, France, Italy, The Netherlands, Belgium and Denmark.

#### 2.2.4 Endogenous theory of Economic Growth

The endogenous growth theory encompasses a class of models and was developed to overcome the deficiency in the neo-classical theory. This was achieved by modifying the assumption on the exogenous technology variable by treating it as an explicit factor. The key attribute of the endogenous growth theory is the presence of factors, such as human capital or the accumulation of knowledge, which are not subject to diminishing returns. At the outset, Kaldor and Mirrlees (1962) endogenised technological progress and output growth rate by relating the output of workers operating newly produced equipment to the rate of growth of investment per worker (Stern, 1991). Arrow (1962) introduced a "learning-by-doing" model; the important feature of the Arrow model is that learning is visualised as a public good; it is the result of experience at the level of the whole economy and can be applied by all firms at no cost (Mulder, De Groot and Hofkes, 2000). As Learning-by-doing is a function of cumulative gross investment, the total factor productivity (TFP) that represents technical progress is treated as an increasing function of cumulated investment. Their approaches reform the production function from the basic Solow model to:

$$Y_i = A(K) f(K_i, L_i)$$

Arrow's model of learning-by doing was extended by Lucas (1993, 2002) who argued that human capital formation drives growth, not only directly, but also by producing externalities. Lucas' idea can be expressed in the production function as:

$$Y_i = A(H) f(K_i, H_i, L_i)$$

Where H is referred to as human capital. The human capital accumulation is a social activity and the interaction between educated workers would actually improve productivity through the process of learning-by-doing from each other (Lucas, 1993). According to Lucas, human capital exerts two effects on the production process; the internal effect of the individual human capital on his own productivity, and the external effect which no individual human capital accumulation decision can take into account, that

is, people relate with others who are more educated in the production process and thereby learn-by-doing. Thus, the production cost would in due course decrease with human capital increases, as learning-by-doing enhance productivity without the need for investment. Based on this, a well-educated labour force tends to be more receptive to new ideas and new technology, thus, the distribution of knowledge is much faster.

According to Balasubramanyam, Sapsford and Salisu (2006), the endogenous growth theory explores the mainsprings of technological progress, or the residual left unexplained in the neo-classical models. It postulates that human capital accumulation is one of the key factors that generate fast technological progress through learning-by-doing, as well as education. It complements the neo-classical theories by explaining technological progress by human capital formation and spillover effects of investment in knowledge. Generally, economic growth may be achieved by a series of factors in the long run. For example, it can be promoted by investment that expands the productivity of physical resources, as well as innovation and technology development, which improve productivity and create new competitive advantage. Furthermore, it can also be achieved by the development of labour skills or investment in human capital.

Schumpeter deviated from the classic economics when he suggested that growth can be attributable to entrepreneurship. According to Schumpeter (1934), economic development is not an ongoing process but characterised by periodic boost and recession which is created by entrepreneurs who identify and exploit opportunities as new ideas, or innovations that enhance growth (Nandan, 2007).

Schumpeter, who is often referred to as the father of modern entrepreneurial thought (Carsrud and Brannback, 2007), argued that an entrepreneur is not just an owner and manager who operates a business, but can also be referred to as an innovator (Herbert and Link, 2006). According to Schumpeter, an entrepreneur engages in innovative activities by carrying out new combinations of productive forces, introduces new goods or services, new raw materials or a new method of production or opens a new market or re-organizes an industry (Brown, 2007).

Entrepreneurship sparks off development through innovation (Herbert and Link, 2006). Based on this, it can be suggested that an entrepreneur plays a central role in the growth/development of an economy.

Endogenous development, according to Schumpeter, is an outcome of the introduction of newness; as such he assigns the role of innovation to the entrepreneur as someone who introduces something completely new. The Schumpeterian entrepreneur is stimulated by a range of factors including the pleasure of creating something new, of getting things done, the will to agree and prove advantage within the business environment (Herbert and Link, 2006).

The entrepreneur recognises opportunities, takes risks, coordinates resources and exploits them to create wealth through production of goods and services. These opportunities take the form of innovations in an economy. The growth in an economy emerges from the entrepreneurial activities of perception, innovation and exploitation of opportunities. The role of the entrepreneur does not stop at economic growth; it further extends to economic development with increases per capita output and wage increases through jobs created, thereby causing structural changes within the business environment (Carree and Thurik, 2005).

In addition, the thoughts of Austrian economists such as Friedrich Hayek and Israel Kirzner play an important role in developing the economic theory of the entrepreneur. They see the entrepreneur as the driver of the market economy. The entrepreneur is seen as a capitalist owner who seeks rewards in terms of profit by actively investing in risky business enterprises (Salerno, 1999). Kirzner (1999) stated that entrepreneurs are alert to entrepreneurial opportunities<sup>2</sup>, wherein the opportunities perceived are assumed to be profitable, while Hayek (1948) argued people possess imperfect information which gives rise to information asymmetry. As such, individual market participants (entrepreneurs) act

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<sup>2</sup> Entrepreneurial opportunity is defined as a situation in which new goods, services, raw materials, markets and organising methods can be introduced through the formation of new means and ends (Shane and Venkataraman, 2000).

on what they perceive to be potential profitable opportunities (cited in Chell, Haworth and Brearley, 1991).

In conceptualising the thoughts of various economists on theories of economic growth/development, the classical economist used the factors of production in explaining economic growth, while the neo-classical economist incorporated technology into the production function by explaining the determinants of growth. However, the endogenous growth theory was created to fill the gap of the neo-classical economist by introducing the entrepreneur as one of the determinants of growth. The entrepreneur identifies and exploits opportunities so as to create wealth through the production of goods and services, which in turn enhances growth. These opportunities could be innovations or new ideas within an economy. The entrepreneurial activities involved in the identification, exploitation and innovation of an opportunity facilitates growth in an economy. The entrepreneurial activities are carried out through a business owned by the entrepreneur. The role of an entrepreneur in carrying out entrepreneurial activities does not only facilitate economic growth, it further extends to economic development. As stated by Rocha (2004), economic growth refers to the quantitative change in the scale of the economy in terms of investment, output, consumption, and income, while economic development is a qualitative change, which entails changes in the structure of the economy including innovations in institutions, behaviour, and technology.

In the context of this thesis, the perception of owner-managers of small businesses in Nigeria are explored in relation to the opportunities presented, as a result of the liberalisation of the telecommunications sector and how they innovatively use the opportunity (increased access to telephony) to enhance business performance and facilitate regional development of the business location.

The inability of many developing countries, including Nigeria, to escape poverty conditions despite the technological progress and wealth around the world, has become a basis for concern for governments and multilateral institutions worldwide. The different economic growth and

development models that have been proposed by various economists do not appear to have resulted in the necessary growth required to free most developing countries from poverty. However, the economies of countries such as South Korea, Malaysia, China, and Taiwan have grown rapidly and have achieved the status of industrialised countries, such as the United Kingdom and the United States of America. In this case, this study has identified the owner-manager of a small business as an important player in an economy and seeks to investigate how the growth outcomes generated by small businesses having increased access to and use of telephony contributes to the development of the business location in a developing country such as Nigeria.

### 2.3 Entrepreneurship in Perspective

The field of entrepreneurship is recognised to be of fundamental importance to any economy. It is considered to play an important role as a mechanism in the industrial and economic development of many nations through employment creation, innovation and welfare effects (Acs et al. 2008). Interest in the field of entrepreneurship has witnessed a significant increase in the amount of research conducted over the past decade by academics, practitioners and government officials (Hisrich and Drnovsek, 2002). This increased attention seems justified based on emerging evidence that new firm creation is a critical driving force in job creation as well as in enhancing government revenues, boosting exports and increasing productivity (Low and MacMillan, 1988). It is also reflected in the increased number of courses at colleges and universities, the expanding number of journals and greater media interest within the field (Hisrich and Drnovsek, 2002).

In addition, interest in the field of entrepreneurship has come to the attention of the business world where entrepreneurs have become role models. Burns (2011 p. 7) stated that "Entrepreneurs have evolved to become super-heroes who valiantly and single-handedly battle to make the most of business opportunities, pulling together resources they do not

own, finding willing suppliers and eager customers and sometimes against all odds, winning out to become millionaires.” Alison (1998) further declared that “the essence of entrepreneurship is in the application of innovatory methods and the acceptance of a risk-bearing function which lies within the individual members of a society” (cited in Carter and Jones-Evans, 2000).

According to Acs et al. (2008), the dynamics of entrepreneurship vary widely depending on the institutional context, thereby revealing the importance of entrepreneurial activities. The orientation of entrepreneurial activities differs across many countries as Acs and Varga (2005) reflected in their study of nine countries<sup>3</sup>. They determined that opportunity entrepreneurship<sup>4</sup> has a positive significant effect on development, compared to necessity entrepreneurship<sup>5</sup> which has no effect. Many researchers have also extolled the importance of entrepreneurial activities and implicitly implied there is a positive relationship between entrepreneurial activities and performance. Wiklund (1998) carried out a survey on the role of entrepreneurship on small firm performance and the findings revealed that a positive relationship exists between entrepreneurship and small firm performance. This relationship spurred the researchers’ interest to further investigate into the field of entrepreneurship; hence this thesis proposes to investigate how the use of telephony in business activities by owner-managers of small businesses enhances business performance. This research draws from literature using both quantitative and qualitative empirical research in order to identify the fundamental behaviour of small businesses. Small businesses represent the business unit for this study, whereby small business owner-managers are recognised as key in identifying business opportunities and later exploiting them to create wealth through the production of goods and services.

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<sup>3</sup> These countries include Belgium, France, Germany, Hungary, Ireland, Italy, Poland, Spain and the United Kingdom.

<sup>4</sup> Opportunity entrepreneurship involves an active choice to start a new enterprise based on the perception that an unexploited or underexploited business opportunity exists (Acs, 2006).

<sup>5</sup> Necessity entrepreneurship involves having to become an entrepreneur because there is no better option or choice of work (Acs, 2006).

This research aims to achieve the theoretical integration of entrepreneurship, telecommunications infrastructure with micro-economic growth.

### 2.3.1 Entrepreneurship and Regional Development

In the study of entrepreneurship, the region as a unit of analysis in research has been extensive. According to Low and MacMillan (2007, p. 139), many earlier works were restricted mainly to “documenting the occurrence of entrepreneurs or their personality characteristics, with little attempt to uncover causal relationships”. However, it is not difficult to find studies that have examined different factors such as tax rates, transportation, costs, scale economies, unemployment, population density, industrial clustering, and availability of finance (Reynolds, Storey and Westhead, 1994; Acs and Storey, 2004) to explain the variations of new business creation across regions which have been discovered to be an important source of competitive advantage and economic organisation in a globalising economy (Amin, 1999; Porter, 2000).

In linking entrepreneurship to regional development, Schumpeter (1934) is of the view that entrepreneurs carry out new combinations through the creation of new businesses (cited in Zhao, 2005). These new businesses directly create jobs, thereby contributing to the accumulation of regional jobs (Van Stel and Storey, 2004). According to the study undertaken by Reynold et al (1994) in forty-one countries, 40% of nascent entrepreneurs were expected to create more than ten jobs within five years.

Furthermore, the combination of Schumpeter’s idea on innovation, the endogenous growth theory and geography of innovation provides a link in relating entrepreneurship to regional development. Schumpeter’s idea on innovation places emphasis on the continued creation of new businesses, while the endogenous growth theory place stresses the role and significance of knowledge spillovers for innovation. The geography of innovation states that location alleviates the inherent uncertainty of innovative activity. According to Audretsch and Feldman (2004), firms

producing innovations tend to be located in regions where necessary resources have been accumulated over time, due to the regions' past success with innovation. In essence, new businesses are the medium of carrying out new combinations, which means that the creation of new firms provides opportunities for new ideas and innovations for an economy (Van Sel and Storey, 2004). According to Jacob (1969), the most significant source of knowledge spillovers are external to the industry in which a firm operates and that the location of the firm is the source of innovation. As such, the variety of industries within a geographic region promotes innovative activity and economic development (Audretsch, 1998; 2003; Audretsch and Feldman, 2004). In addition, Feldman (1994) and Audretsch and Feldman (2004), suggest that knowledge spillovers are geographically confined within the region where the new economic knowledge was created. This means that the region benefits more from knowledge spillovers than the country as a whole. Since knowledge spillovers are a source of regional economic development (Jacob, 1969; Romer, 1990), and entrepreneurship is a medium of knowledge spillover (Audretsch, 1995), it can be argued that entrepreneurship promotes regional development.

The relationship between entrepreneurship and regional development can also be explained through the competitiveness theory. According to (Porter, 1998, p. 7), "the roots of productivity lie in the national and regional environment for competition". As a result and through entrepreneurship, the positive effects of rivalry and competition on economic prosperity are enhanced when it is geographically localised (Porter, 1990; Audretsch and Pena-Legazkue, 2012). This implies that with the introduction of rivalry and competition in a region, entrepreneurship promotes innovations and effectiveness amongst incumbent firms in the region.

Another approach used to explain the relationship between entrepreneurship and regional development is the institutional approach. This can be explained given that entrepreneurs start their business in places in which they are familiar, such as their place of birth, areas in

which they have worked (Boswell, 1973; Jack and Anderson, 2002). Furthermore, the region is the ground for the formation of embedded ties. Based on this, embedded social ties increase collaboration, improve competition, as well as promote the exchange of information, which in turn will reduce the possible negative effect on regional development, such as an increased rate of new entrants within an increasing competitive environment resulting in increased firm death (Uzzi, 1999; Ahuja, 2000). In addition, non-business beneficial resources such as implicit information are exchanged, while confidential trust is built when continuous interactions are maintained (Reynolds, 2012).

The development of the 'new' endogenous growth theory also takes into account the processes of cumulative causation in regional development (Martin and Sunley, 1998; Webber and Rigby, 1999) and explains entrepreneurship as an endogenous factor that contributes to regional development (Audretsch and keilbach, 2004; Rocha, 2004). This theory highlights "the learning-by-doing process as factor of growth along with spillover effects" (Acs and Kallas, 2008; Feldman, 1996). The endogenous growth theory of regional development places emphasis on internal factors, such as technological change and human capital, as factors that contribute to regional development. This is in contrast to the neoclassical theory which focuses on external factors such as macroeconomic policies, as well as foreign direct investment. The endogenous growth theory introduces increasing returns into the production function so as to determine the long-term growth rate within the model. The variables included as increasing returns in the production function consist of endogenous capital investment that produce externalities, human capital that generate knowledge spillovers and Schumpeterian endogenous innovations (Yeung, 2000); which develop unevenly across an economy and are regionally differentiated.

### 2.3.2 Entrepreneurship in Developing Countries

In developing countries, a number of terms have been used to describe entrepreneurial activities. In most cases, entrepreneurship and small enterprises have been used synonymously. The informal sector has also been used to describe entrepreneurial activities in developing countries (Van der Sluis, Van Praag and Vijverberg, 2005). In Africa, most manufacturing firms have fewer than 150 employees; as such they are classified as MSEs. According to Fafchamps (2001, p. 112), "market intermediation in Africa is characterised by a plethora of small traders, seldom exceeding a handful of employees and family helpers". This shows that most businesses operating in developing countries are small businesses and have fewer employees which may include family relations.

The small business and informal sectors were targeted by the World Bank in their efforts to help developing nations. According to a World Bank Report (2003), the contribution of small and medium enterprises, as well as the informal sector remained constant across all levels of income at between sixty-five and seventy percent. It was concluded that as income level increases, there is a shift from the informal sector to the small and medium enterprises sector (Ayyagari, Beck and Demirguc-Kunt, 2003).

Another term used for entrepreneurial activities in developing countries is petty capitalist or small business (Acs and Virgill, 2009). These businesses have a few employees and rely mainly on the owner's, the owner's families and friends' labour to carry out the business activities. In developing countries, the distinction between entrepreneurship and small business does not seem to be an issue, even though scholars in developed economies such as Carland et al (2007) have argued that there is a distinction between entrepreneurship and small business.

However, both small and medium enterprises (SMEs) and entrepreneurship are important in the economy of developing countries. These two terms are usually defined based on the Schumpeterian concept of innovation - new products, new processes, and new markets in developing countries (Hausmann and Rodrik, 2003). A better

understanding of entrepreneurship in developing countries is critical to the development of the private sector to create sustainable economic growth. In recent times, the poverty level of developing countries has been linked to the entrepreneurial nature of their economies. As such, entrepreneurship plays a significant role in poverty alleviation (Prahalad, 2010).

Furthermore, entrepreneurship in developing countries is quite different from entrepreneurship in developed countries and this can be attributed to the nature of the underlying economies in which they operate (Lingelbach, De la Vina and Asel, 2005). Entrepreneurs in developing countries operate based on needs and opportunities, as compared to entrepreneurs in developed countries that operate at the edge of the economy (Nichter and Goldmark, 2009). Entrepreneurship in developing countries is majorly threatened by economic, political and regulatory uncertainties; as such entrepreneurs operating in developing countries tend to spread their resources across several, but related, businesses in order to reduce systematic risk. In effect, a major characteristic feature of entrepreneurs in developing countries is that they start off small by operating in segmented markets in order to reduce risk and have access to the end customers. Access to end customers encourages information flow, which is a key factor for business success in developing countries (Wickramasinghe and Sharma, 2005).

The nature of entrepreneurial opportunities in developing countries plays a crucial role in the market and allows entrepreneurs to receive financial support. In most instances, entrepreneurs of small and medium enterprises in developing countries receive about 87 percent of their financial support from informal sources, such as families and friends, in order to start-up their businesses (Bygrave, 2003). Financial institutions, such as development banks and micro-credit lending institutions also provide access to finance, although these sources rarely support the entrepreneurs at the start-up stage. Emerging evidence reveals that most of the entrepreneurs in developing countries start-up their businesses with small capital by using their savings, which include retained earnings from

previous businesses or salaries from well-paid government jobs (Bhide, 2008).

In the research carried out by Loayza, Schmidt-Hebbel and Servén, (2000) on private savings in developing countries, it was stated that economic instability, which is a form of crisis, presents opportunities of which entrepreneurs can take advantage. Moreover, their findings reveal that during periods of economic instability in developing countries, higher rates of private savings are more likely to occur. Based on the poorly managed nature of financial institutions in developing countries, bootstrap financing has become a predominant source of finance for business at their start-up stage. For example, small business entrepreneurs in China developed a variety of techniques and institutions such as casual interpersonal borrowing, trade credits among wholesalers and retailers, grassroots credit cooperatives and rotating credit associations to provide informal finance for businesses at the start-up stage (Tsai, 2004).

Culture and ethnic fragmentation is another factor that influences entrepreneurial activities in developing countries. For example, ethnic minorities are usually pushed into starting businesses because they are exempt from other categories of employment (Leibenstein, 1968; Jones, Hecker and Hooland 2003). According to Elkan (1988), ethnic minorities from Asia and Lebanon were famous owners of businesses in African countries. It is assumed that a high level of insecurity encouraged the Asian and Lebanese minorities in Africa to seek success as of business owners. In developing countries, like Nigeria, ethnic minorities that are isolated from the indigenous population are more likely to engage in entrepreneurial activities for survival.

The implementation of government policies for economic growth, such as privatisation, has opened up new opportunities for entrepreneurship in developing countries. The creation of new markets as a result of privatisation enables entrepreneurs to identify new opportunities, exploit these opportunities and introduce innovation. For example, Berkowitz and DeJong (2005) found that some regions in Russia with high entrepreneurial activities experienced strong economic performance. This

explains that a policy tool such as privatisation creates opportunities for entrepreneurship in developing countries.

Entrepreneurship in developing countries is also affected by the state of infrastructural facilities (Acs and Virgill, 2009). According to a survey carried out on entrepreneurs in Nigeria, poor transportation infrastructure and a lack of dependable utilities are some of the limitations hindering company growth (Mambula, 2002). Therefore, inadequacy of infrastructure, both in terms of quantity and quality, hinder business entry, survival and growth in developing countries. Similarly, the low penetration of electricity in Africa limits business transactions between countries (Ababa, 2007). In particular, the lack of good infrastructure in developing countries directly results in high operating business costs and reduces the reliability of production. In addition, small businesses cannot afford to make expensive investments in infrastructure and therefore, the inadequate power supply in many developing countries such as Nigeria hinders the growth of small businesses, as well as their capacity to generate employment. In the same way it can be said that developing countries with inadequate transportation infrastructure (roads and railway) and telecommunications (telephones and internet penetration) hinder the growth of small businesses, as well as their capacity to generate employment.

Entrepreneurship in developing countries is also affected by knowledge and information externalities due to the tendency of under producing knowledge. This involves the ability of the entrepreneurs to know what to produce and how to do it. Knowledge and information externalities are affected by information asymmetries and education levels (Acs and Virgill, 2009). A common characteristic of markets in developing countries is information failure. According to Mambula (2002), entrepreneurs in developing countries enter into well-known markets seeking information on new production and new market niches, due to the high discovery costs. There are also costs associated with discovering what an entrepreneur should produce and in most cases, an entrepreneur is unable to fully bear the burden of these costs (Hausmann and Rodrick,

2003). Therefore, information and search costs may lead to lower levels of entrepreneurial activities in developing countries.

The scarcity of available educational resources is a limiting factor for knowledge spillovers in developing countries (Acs and Virgill, 2009). According to a study carried out on entrepreneurs in Africa, it was found that African entrepreneurs with a higher level of education tend to operate more in formal industrial sectors. In addition, people with experience in "large expatriate or Asian-run businesses" or educated members of the political elite are more likely to become entrepreneurs (Elkan, 1998, p. 173). Recent empirical studies by Berkowitz and DeJong (2005) have shown that there is a positive relationship between entrepreneurship and education. According to Mambula (2002), Nigerian SMEs owners and managers are not adequately organised and trained, which affects their performance. However, a study carried out on entrepreneurs in Zambia, revealed that Zambian entrepreneurs had a higher level of education compared to their employees. It was found that 16 percent of Zambian entrepreneurs had university degrees as compared to 2 percent of the employees (Von der Fehr, 1995). In many developing countries, entrepreneurs are more likely to have secondary or university education as a result of increased access to education. This is evidenced as Asian entrepreneurs tend to have secondary, university and professional qualifications, while Zambian entrepreneurs tend to have undergone secondary, university and technical training (Von der Fehr, 1995).

The ability to transform knowledge developed by research into marketable products is likely to be unusually dense in developing countries (Acs and Virgill, 2009). According to a study carried out on the biopharmaceutical industry in Nigeria, it was found that knowledge and innovation policy were disjointed, thereby having an impact on knowledge transfer. It was argued that innovation is suppressed in developing countries. As such, research organisations lack funds to undertake research activities and they also fail to work in partnership with each other (Oyelaran-Oyeyinka and Gehl Sampath, 2006).

In particular, entrepreneurship in developing countries is vital because markets are important for economic development. Entrepreneurship plays a significant role in the progress of developing countries because entrepreneurs fill important gaps such as the employment creation left by incomplete and underdeveloped markets. According to Leff (1979, p. 48), "a key function of entrepreneurship in developing economies is to mobilise factors such as capital and labour which, being imperfectly marketed, might otherwise not be supplied or allocated to the activities where the productivity is greatest". As such entrepreneurship is a vehicle that can be used by developing countries for the efficient allocation of resources which will drive economic growth.

### 2.3.3 Network Externalities

Network externalities have emerged as an important subject within the literature on entrepreneurship in developing countries (Audretsch, 2003; Acs and Virgill, 2009). Network externalities are important for small businesses in developing countries because the smallness of these enterprises has a negative effect on transaction costs, consistency of production quality and scales of economies (Fafchamps, 2001). Business networks can help in overcoming the disadvantages of the smallness associated with markets in developing countries by creating positive externalities (Mambula, 2002).

Network externalities help firms in developing countries to access information on customers, suppliers, markets and production techniques; as such business networks are important for entrepreneurs for business growth and survival, as well as promoting economic growth and development. Business networks assist in filling gaps in finance, technical knowledge and marketing information in underdeveloped market systems (Brautigam, 2003). In effect, business networks facilitate entrepreneurship. A study carried out on indigenous entrepreneurs in Nigeria on the manufactured spare parts of automobiles, revealed that the business networks formed with Chinese manufacturers were beneficial, as

Nigerian entrepreneurs acquired technical knowledge and marketing information from the Chinese manufacturers. In effect, entrepreneurs' business networks are important in developing countries. They help to facilitate knowledge and demonstration spillovers (Acs and Virgill, 2009).

#### 2.3.4 Roles of an Entrepreneur

A significant amount of research has been carried out in an attempt to understand, define and describe what the entrepreneur does (Storey, 1994). Recent studies, including those carried out by the Global Entrepreneurship Monitor (GEM), have been able to link the role of an entrepreneur to economic growth (Wennekers, 1999; Carree and Thurik, 2005; GEM reports, 2007; 2008; 2009). The early economists for example, Adam Smith considered the entrepreneur as a supplier of capital and one who interfered between labour and the consumer. David Ricardo assumed that the role of the entrepreneur was to gather capital and without it there would be no economic development. Mill called an entrepreneur an organiser, while Walras considered the entrepreneur to be a coordinator of factors of production (Gopakumar, 1995). Cantillon who introduced the word entrepreneur described the entrepreneur as an agent who purchases means of production at certain prices, so as to combine them into a product that could be sold at prices that are uncertain at the present time (Gupta and Srinivasan 1995). Walker described the entrepreneur as the principal manager of production within a business environment (Herbert and Link, 2010). Say (1824) defined an entrepreneur as someone who shifts economic resources from an area of low production to an area of higher production and greater yield. Thus, the entrepreneur is an economic agent who combines all means of production and process for the creation of an enterprise. Hence, this can be referred to as a business start-up (Bhide, 2000). Thus Say's description of the role of an entrepreneur is within the field of economics.

Entrepreneurs can be regarded as managers of small, family-owned businesses or start-up businesses. The role of an entrepreneur in

managing a small business consists of management tasks which are carried out routinely, nurturing relationships with venture capitalists and other sources of finances, product development and marketing (Klein and Foss, 2008). According to Evans (1949), an entrepreneur initiates, organises, manages and controls the interactions of a business unit, while also combining the factors of production to supply goods and services (Gedeon, 2010).

Kilby (2009) identified thirteen roles of an entrepreneur which included; the identification of opportunities, organising resources, procuring inputs, advertising products, management of finances, production, human relations within the business as well as introducing new products and production techniques. Kilby argues that entrepreneurial activity results in the change from low value to high value in an economic system. Thus, the entrepreneur is responsible for start-up, acquisition and the expansion of the business (Casson, 1982; Storey, 1994; Acs, 2002; and Baumol, 2007). Based on the discussion above, it is obvious that the entrepreneur makes the choice of starting and managing a business, takes risks, expands, enters and exits markets.

In particular, the main role of an entrepreneur is to create value through recognising opportunities and combining resources. This is achieved through innovation, business start-ups, mobilisation of resources and ensuring the resources work efficiently. The activities of the entrepreneur result in economic activities of production, job creation and exchange, thereby creating wealth which in turn results in economic growth. Thus, in this study, an entrepreneur is defined as an owner and manager of a small business venture who perceives opportunities and exploits them and looks for new ideas and innovative technologies in order to create wealth. Hence, it is hypothesised in this study that an owner-manager of a small business can be regarded as a facilitator of growth who recognises opportunities presented as a result of the liberalisation of the telecom sector and innovatively uses telephony in business activities to enhance business performance. Thus, generating outcomes that result in economic

activities that facilitate micro-economic growth and development of the business location.

### 2.3.5 The Entrepreneurial Process

The entrepreneur plays a significant role in the entrepreneurial process, and the degree to which entrepreneurship exists or can be stimulated within the entrepreneur, is key in initiating the entrepreneurial process (Davidsson, 2012, 2000; Fayolle, 2007). The entrepreneurial process involves all the functions, activities and actions associated with the recognition of opportunities and creation of wealth (Bygrave and Hofer, 1991; Frith and McElwee, 2007). The Entrepreneurial process can be described from two dimensions: opportunity recognition and information search; and resource acquisition and business strategies (Ucbasaran, Westhead and Wright, 2001).

Opportunity recognition and information search are usually considered to be the first crucial steps in the entrepreneurial process (Shane and Venkataraman, 2000). The ability to make a link between specific knowledge and a business opportunity entails a set of skills, ability and circumstances that are not uniformly distributed (Venkataraman, 1997; Teece, 2009). An entrepreneur requires personal and psychological characteristics such as boldness, an enterprising imagination and creativity in order to perform effectively (Lumpkin and Dess, 1996).

Thus, the process of searching for information and opportunity recognition can be influenced by the cognitive behaviour of the entrepreneur. This process can be enhanced by the entrepreneur's experience, knowledge of processing information and ability to gather the right amount of information (Ucbasaran, Westhead and Wright, 2001; 2003). However, experience may not necessarily enhance the ability of an entrepreneur to recognise opportunities. According to Cooper, Folta and Woo (1995), entrepreneurs with limited entrepreneurial experience sought more information related to opportunities than entrepreneurs with more entrepreneurial experience.

However, the entrepreneurial process is concerned with the recognition of an opportunity, the gathering of relevant and adequate information regarding the business opportunity. Once this is in place, the next step in the entrepreneurial process is to acquire resources and develop strategies that help exploit the opportunity. In particular, Chandler and Hanks (1994) stated that the acquisition of resources and development of business strategies are crucial for business performance. The entrepreneur is usually the key resource of a business (Westhead, 1995; Bates, 1998; Santarelli and Vivarelli, 2007).

Furthermore, resources can also be tangible and intangible resources for example, human, social, physical, financial and organisational capital (Cooper, Gimeno-Gascon and Woo, 1994; Chandler and Hanks, 1998). Although, resources are crucial to the performance of a business, it is also essential for entrepreneurs to develop skills and business strategies to make better use of the resources that are available to them (Ucbasaran, Westhead and Wright, 2001).

The process of opportunity recognition and the development of business strategies to exploit the opportunity in order to create and accumulate wealth is the process of entrepreneurship. The entrepreneurial process is, therefore, the application of innovative process and the acceptance of risk bearing function, which is directed at bringing about social and economic changes (Morrison, 2000; Kuratko, 2008). In particular, the entrepreneurial process provides the platform in recognising the role of an entrepreneur, not just in business growth, but also through their contribution to economic growth.

### 2.3.6 Entrepreneurship and Business Growth

Business growth has become a major theme that is rapidly expanding within the field of entrepreneurship, economics and management studies (Penrose, 1959; Kirchhoff, 1994; Davidsson, Delmar and Wiklund, 2002; 2006). According to Delmar, Davidsson and Gartner, 2003, Business growth is a multidimensional phenomenon, to which researchers have attributed different definitions. The definition of business growth, as captured by Weinzimmer (2000), described business growth as a dynamic measure of change over a period of time; Liao, Harold and Pistrui (2001) referred to business growth as the change in sales revenues, employee numbers, or return on assets; Penrose and Pitelis (2002) conceptualised business growth as a process of development; and Bridge, O'Neil and Cromie (2003) represent business growth as an increase.

Studies carried out by researchers such as Cragg and King, 1988; Storey, 1994; Davidsson, 1991; Barkham, Fagg, and Stone, 1996; Davidsson et al., 2002; and Davidsson, Achtenhagen and Naldi, 2005 have used different characteristics, such as those of the owner-managers (education, experience), those of the business (age, size, type of ownership), of management strategies (market position, innovation process) and the environment (sector, location, competition) to predict growth in small businesses. Evidence from studies on small business growth has shown that there have been inconsistencies in terms of the characteristics that predict business growth. This is evidenced in the study carried out by Storey (1994) in determining the characteristics of small business growth in the UK and US. It was found that industry experience was a key determinant to business growth. While studies carried out by Baum, Locke and Smith (2001) on the cause of business growth found that industry experience does not have a positive relationship with business growth.

In addition, small business growth may be influenced by external factors such as the structure of industry and marketplace, as businesses tend to grow rapidly in a dynamic region or industry (Dobbs and Hamilton, 2007), and internal factors such as motivation of the owner-managers (Delmar and Wiklund, 2003) and skills of the owner-manager and employees

(Papadaki, Chami and Branch, 2002). Thus, business growth to a substantial extent is influenced by the goal of the owner-manager, in relation to growth, including the skills possessed by the owner-manager and employees. However, the environmental influence on business growth cannot be ignored. According to Storey (1994), some locations are more conducive to business growth. This was further supported by Davidsson (1989; 2004) who determined that the characteristics of a geographical area are important for industries where businesses are bound to the local market.

Furthermore, Penrose (1959) stated that “business growth is governed by a creative and dynamic interaction between a business’ productive resources and its market opportunities” (cited in Penrose and Pitelis, 1999). In understanding Penrose’s idea on business growth, thirteen points were highlighted by Penrose and Pitelis, four of which are significant to this study. They include: Firms are a bundle of resources, under internal direction, offering goods and services which are sold in markets for profit. Their boundaries are defined by the area of coordination and authoritative communication; Resources render (multiple) services. The heterogeneity of services from resources gives each firm its unique character. Effective use of resources takes place when resources are combined with other resources; Human, and in particular managerial resources, are of essence because expansion requires planning and managerial resources that enable the firm to plan are firm-specific, they cannot be acquired in the market; Moreover, the external environment is an image in the mind of the entrepreneur. Businesses are governed by their productive opportunity, i.e. all the productive possibilities that its entrepreneurs can see and take advantage of.

Within the context of this study, the points stated above are operationalised into assumptions as follows: The business location (external environment) should determine the availability of opportunity, such as increased access to telecom services that the owner-managers of small businesses can take advantage of in carrying out the activities of the

business. The identification and exploitation of the opportunity should then allow the owner-managers of small businesses to innovatively use telephony. The managerial resources of the owner-managers of small businesses, such as education and experience, may have an influence on how the owner-manager perceives the opportunities of having increased access to telephony and the ability to innovatively use telephony in business processes in order to enhance business performance. The effective use of telephony as a resource, in combination with other resources such as networking and access to business information, should facilitate the growth and business performance of the small businesses. The use of telephony as a resource by small businesses should facilitate the coordination of business information that is used in organising the business activities, which in turn should enhance the capability of the small business to contribute to the regional development of the business location.

As would be discussed in Chapter Five, these assumptions describe the theoretical framework that connects the key concepts and also assist in the construction of the conceptual framework and research model used in this thesis.

### 2.3.7 Entrepreneurship and Small Business

Entrepreneurship and small businesses are interrelated, but are not the same concepts. Entrepreneurship is a process which can take place in both small and large businesses and concentrates on opportunities rather than resources (Ardichvilli, Cardozo and Ray, 2003; Thurik and Wennekers, 2004). On the other hand a small business can be regarded as a vehicle for people who basically run businesses for necessity or survival and for entrepreneurs who introduce new products and processes that could change the industry (Wennekers and Thurik, 1999; 2004). Small businesses undertake process innovation or product innovation so as to enhance the capability of their production processes, supply chain operations and performance. Moreover, they are regarded as a central

part of the economy (Kirchhoff, 1994; Cooper, 2005) and they include franchises, shopkeepers, as well as people in professional occupations.

In recent times, small businesses have been regarded as a medium for entrepreneurship as they contribute to employment, social and political stability, as well as innovative and competitive power (Audretsch and Beckmann, 2007). This has led to the enhanced perception on the important role of entrepreneurship as suggested by recent studies, that entrepreneurship is a fundamental determinant of economic growth (Audretsch and Thurik, 2000; Carree and Thurik, 2005; Carree et. al, 2007). Studies carried out by Acs and Audretsch (1993) showed that entrepreneurial activity has moved from large businesses to small businesses. They provided evidence on manufacturing industries in countries with varying economic development.

The reasons for the shift towards small businesses include; fundamental changes in the world economy related to the intensification of global competition and an increase in the degree of uncertainty and growth in market fragmentation. Moreover, changes in the direction of technological progress have resulted in the structural shift from large businesses to small businesses. The consequences of this shift have increased the importance of small businesses in the economy as agents of change through their entrepreneurial activity, as they are a considerable source of innovative activity, stimulate industry dynamics, as well as create a significant share of employment opportunities (Baumol, 1993; Audrestsch et al., 2002).The industry structure is generally shifting towards a greater role for small business and this has been identified in studies carried out by Audretsch et.al (2002) and Carree et.al (2002).

## 2.4 Concept of Small Businesses

The classification of businesses by size has received considerable attention, both in the academic and business world (Atkins and Lowe, 1997; Brooksbank, 1991; Fink and Kazakoff, 1997; Storey et al, 1987). The classification of businesses differs across regions, national boundaries and international organisations. It has been defined by two major terms which include Small and Medium Enterprises (SMEs) and Small or Medium sized Businesses (SMBs). These two terms (SMEs and SMBs) have been used interchangeably by both academics and International organisations such as European Commission (EC), the World Bank, to categorise business firms according to their sizes. According to the European Commission, the classification is based on the number of employees in the business, the annual turnover and the annual balance sheet of the business. The European Commission uses Small and Medium Enterprises (SMEs) when classifying business firms and further categorises them into three components which include: micro-enterprises, small enterprises and medium enterprises. Table 2.1 shows the classification of business by size according to the European Commission.

Table 2.1: Classification of business by size according to the definition of European Commission

Enterprise Category	Headcount: Annual Work Unit (AWU)	Annual Turnover	OR	Annual Balance sheet total
Micro enterprise	<10	≤ €2 million (previously not defined)		≤ €2 million (previously not defined)
Small enterprise	<50	≤ €10 million (in 1996 €7 million)		≤ €10 million (in 1996 €5 million)
Medium sized enterprise	<250	≤ €50 million (in 1996 €40 million)		≤ €43 million (in 1996 €27 million)

Source: European Commission, 2005

As shown in Table 2.1, the number of employees in a business is an essential criterion in determining into which category an SME falls. This includes full-time, part-time seasonal employees, and the owner-manager

and partners that engage in regular activities in the business and benefit financially from the business. The annual turnover is determined by calculating the income a business receives in a particular year from its sales and services after discounts, while the annual balance sheet total refers to the value of the main assets of the business. According to the European Commission (2005), this definition is used to promote small businesses, innovation, as well as to encourage partnership, while ensuring that only businesses that need support are targeted by public schemes.

This statistical definition in classifying businesses by size has come under criticism because it suffers from problems related to currency translation as well as inflation (Burn, 2001). An alternative definition of classifying businesses by size was also provided by Bolton (1971), who suggested an economic definition and statistical definition. The economic definition classified businesses as being small if they fulfilled three conditions which include: having a relatively small share of the market place; are personally managed by owners or part owners and not through the medium of a formalised management structure; and are independent, and have not been formed as part of a large enterprise. Based on this economic definition, Bolton further developed a statistical definition to address three main issues which include: to quantify the size of the small business and its contribution to economic aggregates such as gross domestic product, employment and innovation; to compare the extent to which the small business has changed its economic contribution over time; and to enable comparisons to be made between the contributions of small businesses in a particular country with that of other countries. The statistical definition developed by Bolton (1971) is presented in Table 2.2 below.

Table 2.2: Bolton's statistical definition of a small business

Sector	Definition
Manufacturing	200 employees or less
Construction, Mining and Quarrying	25 employees or less
Retailing and Miscellaneous services	Turnover of £50,000 or less
Motor trades	Turnover of £100,000 or less
Wholesale trades	Turnover of £200,000 or less
Road transport	Five vehicles or less
Catering	All excluding multiple and brewery-managed houses

Source: Storey, 1994

As shown in Table 2.2, the definition of small business varies across sectors. The definition of some sectors was based on the number of employees such as manufacturing, construction and quarrying; while some sectors like the service sector were defined based on sales turnover. On the other hand, others, such as the catering sector were defined based on ownership. This shows that there is no universally accepted form of defining small businesses. Small is a relative concept, depending on the country. What is considered small in a particular country may not be viewed as insignificant in another. In addition, definitions of businesses by size also vary across regions or countries depending on the purpose for which the businesses were designed for in the particular region or country.

In a developing country context, the definition of SMEs is interrelated to those mentioned above (Liedholm and Mead, 1999). In a series of surveys carried out in most African countries, using the definition of Micro and Small enterprises (MSEs), the findings show that less than two percent of businesses have more than ten employees (Liedholm, 2002). Most MSEs in developing countries do not keep accurate records of their business, thereby making it difficult to classify them based on sales turnover.

## 2.5 The Importance of Small Businesses to Economic Development

The role small businesses play in economic development has received a significant amount of attention. Studies relating to entrepreneurship and regional development in particular have developed rapidly in recent years (Liedholm and Mead, 1999; Steel, 2005; Davidsson and Wiklund, 2006; Bosworth, 2008; and Bosma et al., 2009). The economic importance of small businesses still remains a subject of debate as traditional analyses of economic development tend to neglect the role played by small firms in an economy, although a substantial amount of researchers agree that micro and small enterprises significantly contribute to economic development (Harvie, 2003; 2005; Chew, Ilavarasan and Levy, 2010). In spite of the fact that entrepreneurial activities differ across the globe, there seems to be emergent scientific evidence linking the activities of small businesses to economic development (Bosma et al., 2009).

The contribution of small businesses to an economy depends on the level of economic development. In less developed countries, necessity-driven self-employment activities tend to be higher, as these economies cannot keep pace with the demand for jobs in high productivity sectors. This leads to a situation where many people create their own economic activity for survival. The level of necessity-driven entrepreneurial activities drops when an economy develops, thereby leading to the growth of productive sectors which in turn provides more employment opportunities. As an economy develops, with improvements in wealth and infrastructure, opportunity-driven entrepreneurial activities increase which prompts economic growth. This development gradually shifts towards 'extractive and emergent scale-intensive' sectors which are located in various regions. This eventually provides opportunities for the surplus labour in the regions to create self-employment opportunities to make a living, resulting in regional development (Bosma et al., 2009).

The underlying principle behind entrepreneurial productivity is the ability of an entrepreneur to identify opportunities in an economy and turn the low yielding resources available, into higher returns from which the

entrepreneur can profit (Casson, 1997, Acs and Kallas, 2008). The continuous reallocation of production factors, such as capital, labour and knowledge improves the efficiency in an economy and is essential to the entrepreneurial process (Acs and Storey, 2004) as it leads to economic development (Acs and Kallas, 2008). The entrepreneurial process is presumed to yield higher returns from the utilisation of resources, but this may not always happen as not all business enterprises are successful. According to Acs and Storey (2004), the failure of a business enterprise may act as a learning point for other entrepreneurs to establish and build up profitable business enterprises. Hallberg (2000) and Acs and Kallas (2008), stated that many small businesses are unsuccessful and exit the market too early. However, they noted that the aggregate number of successful small businesses that redeploy low yielding resources to achieve higher returns exceeds the number of unsuccessful small businesses.

According to the study carried out by Audretsch and Thurik (2001) using the OECD data to investigate the relationship between entrepreneurial rate and income per capita, a positive relationship was found between growth in entrepreneurial activity and higher rates of economic growth, as well as a decline in unemployment. Recently, the 2009 executive report of the Global Entrepreneurship Monitor (GEM), a research consortium conducted research in 54 countries with the aim of understanding entrepreneurship and economic development. It measured the level of entrepreneurial activity amongst people involved in setting up a business and owners-managers of new businesses and analysed the impact on economic development. The findings show a significant correlation between entrepreneurial activity and economic development (Bosma et al., 2009).

Furthermore, it is important to note that despite the significant evidence provided by researchers that small businesses contribute to economic development, some counterarguments exist. According to Deakins and Freel (2006), changes in entrepreneurial activity are influenced by changes in the level of economic activity and not vice versa. Based on the

evidence derived from the United Kingdom, they found that changes in gross domestic product (GDP) growth precedes changes in the stock of value added tax (VAT) registered firms, which means that entrepreneurship is an end result of growth and not a cause of growth (Deakins and Freel, 2006).

In addition, the on-going debate on the positive impact of small businesses on economic development (Burnette, 2000), has shown there is a gap in the findings and datasets on the relationship between the entrepreneurial activities of small businesses and economic development. However, the role of small businesses in poverty reduction and job creation is more evident (Mead, 1994; Liedholm and Mead, 1999; Steel, 2005; Deakins and Freel, 2006), and this is where the significance of this study lies. In this regard, it is important to investigate the use of an infrastructure with particular emphasis on telecommunications (telephony) which has the potential to contribute to regional development through job creation, improve small business performance and reduce poverty.

## 2.6 The Role of Networking in Small business

The contribution of networks is an important aspect of the entrepreneurial process (Anderson and Jack, 2002; Butler, Brown and Chamornmarn, 2003; Elfring and Hulsink, 2003). Networks comprise of sets of connected exchange relations (Johannessen, 2003) and play an important role in contemporary life as the modern economy would be very much diminished without transportation, telecommunications and railroad networks.

Network components are complimentary to each other as it is inherent in the structure of a network that many components of a network are required for the provision of a typical service (Economides, 1995). Entrepreneurs are embedded in social relations, such that every individual is seen as a network node, through which every person can make contact with each other (Ahuja and Carley, 1998). In recent times, networking has become a significant entrepreneurial tool contributing to the establishment of small business (Greve and Salaff, 2003), business

development and growth (Chell and Baines, 2000). Networks provide important resources for example money, information, moral support, material aid, ideas and markets for small business development.

An entrepreneur appears to benefit from diverse information flows and a key benefit of networks in the entrepreneurial process, is the access they provide to information and advice (Hoang and Antoncic, 2003). While an entrepreneur is regarded as the owner, as well as the manager of a small business, the managerial capacity of the entrepreneur involves the organisation of resources available to the business, including the management of networking activities. Generally, an organisation is regarded as a social unit of people working together to meet a need, or to pursue a common goal. Based on this, a small business can be referred to as an organisation which involves the management of business resources and network activities. Thus, entrepreneurs are required to secure the resources embedded in their networks. Appropriate management of resources is essential for the growth of the small business, without which the business would have to deal with problems that could lead to a decline in business activities and eventually result in the failure of the business (Ward, 2010).

In addition, it is essential for the entrepreneur to manage networking activities well due to the impact they have on business development. The entrepreneur manages the business's networking activities by developing relationships through an exchange process with other actors such as customers, suppliers, friends and relatives in the business environment (Hakansson and Snehota, 2006). The exchange process involves continuous interactions to facilitate access and exploitation of resources between the entrepreneur and all the other actors in the business environment (Hakansson and Snehota, 2006).

Also, the exchange process involves access to and the exploitation of both intangible, and/ or economic resources (Hertz, 1992). The intangible resources include the exchange of information, ideas and motivation, while the exchange of materials, goods, services and money are considered to be economic resources. For small business entrepreneurs,

social and economic exchange relationships are fundamental in network concepts. Through the exchange process entrepreneurs of small businesses obtain both tangible and economic resource from their relatives, friends, customers, suppliers and competitors (Hisrich and Drnovsek, 2002).

Networking with family and friends has a major impact on small businesses and is considered a primary source of assistance and support when starting up and operating small business (Pistrui, Welsch and Roberts, 1997; Jack, 2005; Le and Nguyen, 2009). In a developing country context, families usually provide assistance for their relatives in business in order to enable them to participate in social and economic activities, as well as during periods of failure. In addition, small business entrepreneurs also receive support such as labour, capital, and information from their friends and neighbours. This explains the significant role the family and society resources play in the establishment and development of small businesses in developing countries.

Customers and suppliers are also vital for small business growth and networking within this group of people is inevitable for small businesses (Chell and Baines, 2000). In developing countries, entrepreneurs, customers and suppliers integrate at the local or regional level and are quite familiar with each other (Wilson, 2004). The relationship built between the entrepreneur, customer and supplier helps small businesses to obtain resources required for business activities. Moreover, if anything goes wrong with their relationship, problems may arise and can lead to a decline in business activities (Shaw, 2004; Njanja and Commerce, 2009). Since networks entail an interaction process; resources and information are obtained through the interaction of entrepreneurs and their social networks (Lee, Lee and Pennings, 2001; Greve and Salaff, 2003; Smith-Doer and Powell, 2003).

Entrepreneurs use personal networks to access business information that is available from government extension officers, consultants, and friends etc. (Van Bussel, 1998; Okello-Obura et. al, 2008) so as to build up their business strategies, as well as compete in the market. A negative change

in the relationship between the entrepreneur and external environments or personal networks, will affect the small business' activities as well as its performance (Lee and Tsang, 2001). Thus, the effective management of relationship networks between entrepreneurs and their social resources is fundamental for small businesses. An entrepreneur tries to substantially increase sales through the development of marketing networks and Larson (1992), supports the idea that key external relationships with other businesses significantly contribute to the entrepreneurial firm's financial success, rapid growth, adaptiveness and innovation. As such, these external groups are important in the networking process of small businesses, because they contribute to business growth and performance.

Thus, this study assumes that increased access to telephony enhances the capability of small businesses to link with new markets and networks, in order to facilitate the survival and growth of the business.

## 2.7 Information and Communication Technology in Small Business

In developing economies, economic agents such as owner-managers of small businesses operate in business environments which are characterised by disjointed and incomplete information, including an imperfect awareness of markets, technology, procedures and regulations. From a global perspective, it is difficult to see how these small businesses can benefit from emerging opportunities in local and export markets based on the problems of both imperfect markets and incomplete information. Small business entrepreneurs do not take full advantage of the opportunities offered by the markets, both in terms of information chain processes, as well as inputs needed to carry out their business operations. Empirical evidence also suggests that information is a fundamental requirement for business creation, development and survival and that information and communication technologies (ICTs) are capable of reducing information gaps within the business sector (Moyi, 2003).

The access and use of information and communication technology by small businesses has often been seen as a basic building block of

economic development (Qureshi and York, 2008). In many developing countries, the ability to access and use information and communication technologies has been hindered by many challenges (Duncombe, 2010). This can be attributed to a lack of access to physical resources and infrastructures (Moyi, 2003). Since small businesses are integral parts of any country's economy, it can be deduced that if small businesses have access to and use information and communication technologies effectively, it could help their business grow and become profitable, whilst contributing to the economic development of the country. According to Duncombe and Heeks (2002), small businesses relied on local and informal networks for information. However, the information obtained by these small businesses was of poor quality and not easily accessible. As such, they concluded that information and communication technology played a significant role in providing information on markets, customers and suppliers, and is required by small businesses in carrying out their business activities to ensure their survival and growth and to enable them contribute to the creation of jobs and economic wealth.

Within the context of small businesses, which is an integral part of the economy of any country including developing countries, information and communication technology (ICT) is defined as an information handling technology that small businesses use and to which they may have easy access (Heeks, 1999; Duncombe and Heeks, 2002; Duncombe, 2010). The information handling technology includes both digital and non-digital technologies. The digital technology encompasses the telecommunication networks, radio, television and soft technology such as books, while non-digital technology focuses on networks of family and friends (Duncombe, 2010).

With the particular focus of this thesis on the use of information and communication technology by small businesses in a developing country, emphasis is placed on telecommunications networks, particularly telephony, as an information handling technology used and easily accessed by small businesses. According to the Observatory of European SMEs (2002), the most common information communication technology

(at 78 percent) used by small businesses, is the telephone which has a long history of demonstrating that through use by a developing country it can reduce costs, risks and uncertainty and increase income reduce (Kenny, 2002). This is further supported by the study carried out by Duncombe and Heeks (1999, 2001), which emphasises the relative appeal and utility of the telephone among micro-enterprises.

Furthermore, small businesses are more passionate about the power of basic voice connectivity than other forms of information and communication technology such as the internet (Kenny, 2002). Thus, this thesis aims to investigate the effect of increased access and use of telephony by small businesses on business performance and regional development of the business location in Nigeria.

## 2.8 Conclusion

This chapter concentrates on a review of the theories of economic growth/development, entrepreneurship and business growth. It also outlines the fact that the entrepreneur perceives opportunities and exploits them to create wealth through the production of goods and services thereby contributing to economic development. It introduces the theory of entrepreneurship by discussing entrepreneurship and regional development, presenting the role of an entrepreneur and the significance of the entrepreneurial process.

In particular, it emphasises the economic importance of small businesses as a source of job creation and concludes that SMEs offer many opportunities that can contribute to micro-economic development. The chapter also reviewed the role of networking in small businesses and suggested that they influence business start-up, survival and growth.

The chapter concludes by discussing the impact of information and communication technology in small businesses. This described the role information and communication technology plays in providing information required by small businesses in carrying out their business activities. It

concluded that small businesses use information handling technologies to gather information on the market, customers and suppliers for their survival and growth, which enables them to contribute to economic development through job creation. It also concludes that the information communication technology most used by small businesses is the telecommunications network, with particular emphasis on the telephone. This has helped to reduce costs, increase income, as well as cut the level of risk in developing countries.

Overall, the chapter developed and presented a contextualised, yet structured construct of concepts and contributions of entrepreneurship and its contributions to economic development. It has also developed an understanding on the use of telecommunications by small businesses for business activities, in order to facilitate their contribution to economic development. The next chapter focuses on entrepreneurship and telecommunications development in Nigeria where this study is based.

## CHAPTER 3

### SMALL BUSINESS AND TELECOMMUNICATIONS DEVELOPMENT IN NIGERIA

#### 3.1 Introduction

In Chapter Two, the general theoretical framework of the study was presented. This Chapter discusses the development of small businesses and the telecommunications sector in Nigeria. The main objective is to provide a historical description on the development of small businesses in Nigeria and the reform process of the telecommunications sector in the country. In particular, this chapter focuses on the restructuring of the telecommunications sector in Nigeria. The underlying principle is to obtain a better understanding on the causes and consequences of the reform and the role that improved telecommunications infrastructure plays in the economic development of a developing country, Nigeria.

Although the focus of this chapter is to review the topic, discussions on the historic, political and economic perspectives of the study will also be included, as it is noticeably absent in many economic impact studies related to telecommunications services. The telecommunications sector and small businesses are important to a nation, as they account for over two to three percent and ten percent respectively of the gross domestic product. The telecommunication sector also serves as an essential input in a variety of industries which may act as future engines for economic growth (Noll and Shirley, 2002).

This chapter is structured as follows. Section 3.2 provides a political, economic and socio-demographic overview of Nigeria. Section 3.3 offers an historical perspective on the development of small businesses in Nigeria. Section 3.4 provides an historical overview of the telecommunications sector in Nigeria. Section 3.5 discusses the restructuring of the telecommunications sector in Nigeria. Section 3.6 looks into the regulatory body of the Nigerian telecommunications sector. Section 3.7 describes the overall growth of the sector. Section 3.8

evaluates the telecommunications sector and the Nigerian economy. Section 3.9 provides a summary to the chapter.

## 3.2 THE POLITICAL, ECONOMIC AND SOCIO-DEMOGRAPHIC OVERVIEW OF NIGERIA

### 3.2.1 Political Overview of Nigeria

The political climate in Nigeria is currently stable. Nigeria has previously been characterised by many ethnic and religious crises that have been magnified by the significant differences in economic development between the southern and northern parts of the country. Incidentally, out of the 52 years Nigeria has been a politically independent nation, only 21 years have been spent under democratic rule. As a result, much of the political and social barriers to economic growth and development can be linked to military rule.

The coup which occurred on 15<sup>th</sup> January, 1960 brought a military government, led by General Gowon, to power. Between 1967 and 1970, Nigeria experienced a civil war which resulted in hundreds of people dying. After the civil war, political power remained with the military government. The military regime in power in the post war period was marred with corruption at every level of national life, with inefficiencies compounding the effect of corruption. In addition, the national security came under threat as a result of increased criminal activities which had a negative impact on efforts to bring about economic development. The political atmosphere deteriorated to the point that another military coup occurred in July 1975. At this time, the military government in power, led by General Murtala Muhammad made efforts to restore public confidence in the federal government, reduce government expenditures on public work, and promote the expansion of the private sector, as well as returning Nigeria to civilian rule. This was short-lived as another military coup occurred in February, 1976.

The military government, led by General Obasanjo that came into power thereafter, continued with the policies of its predecessor to improve the quality of public service and returned Nigeria back to civilian rule in 1979. During the civilian rule headed by Shehu Shagari, oil prices were high and revenues increased, raising hopes of improvements in the Nigerian economy, however, this excitement was also short-lived, due to the end of the oil-boom in mid-1981, precisely when the prospect of continuous economic growth and prosperity were at a peak. The recession that set in put severe strains on the Nigerian economy. By 31<sup>st</sup> December, 1983, the country was returned to military leadership through a military coup led by General Muhammadu Buhari. The overthrown civilian government was associated with corruption, so the military rulers made an effort to secure public support by reducing the level of corruption and demonstrating their commitment to lower spending and reducing the amount of benefits and public services provided by the government by trimming the federal budget. Furthermore, in an effort to mobilise the country, the Buhari-led military government launched a national campaign which preached work ethics, emphasized patriotism, decried corruption and promoted environmental sanitation. This was also short-lived as a particular group of military officers did not agree with these national developments and removed Buhari from power in August, 1985 through a coup.

The military government which took over power in August, 1985 was led by General Babangida. They attempted to address the worsening recession through the structural adjustment programme of 1986. However, the recession led to currency devaluations, a decline in real income and rising unemployment during the second half of the 1980s, despite the support of US\$4.2 billion from the World Bank and the rescheduling of foreign debt. The Babangida-led military government remained in power until June, 1993. An interim national government led by Ernest Shonekan after the military's annulment of election results in June 1993, was appointed as a caretaker government. This interim national government is the shortest government that has ever ruled in the

history of Nigeria, as control was seized from the caretaker government in November, 1993 by another military officer, General Abacha.

The Abacha-led military government was characterised by violations of human rights and corruption. This drove the European Union to impose sanctions on Nigeria, thereby suspending developmental aid as well as suspending Nigeria from the Commonwealth. The Abacha government also illegally transferred US\$458 million into the Premier's personal bank account in Switzerland. Upon the death of Abacha in June 1998, General Abdulsalami assumed control and placed the transition by civilian rule as a priority. In February 1999, the transition to civilian government was completed with the presidential elections and the civilian government led by Chief Olusegun. Obasanjo was sworn in on 29<sup>th</sup> May, 1999.

Nigeria is a federal republic composed of thirty-six states and a federal capital territory, which are further divided into 774 local governments. The country operates a federal presidential system with three complementary arms which include the executive, the legislature and the judiciary. The administration is structured along three levels of government: federal, state and local governments. The executive arm of the government, at the federal level, consists of the president, vice-president and members of the federal executive council, while at the state level, it is made up of the governor, deputy governor and members of the state executive council. The legislature is present at federal and state levels. The federal legislature consists of 109 members in the Senate and 360 members in the House of Representatives. The two combined is known as the National Assembly while at the state level, the legislature is known as the House of Assembly. The president, governor, their deputies, as well as members of the legislature at both Federal and State levels are elected, under the current constitution of Nigeria, for four years, with an option to be re-elected only once. The senate president is the head of the federal legislature. The judiciary interprets the laws and gives rulings in conflicts between the Executive and the Legislature. It carries out these functions through the various established courts: the Supreme Court

which is the highest court of the land; the court of Appeal; the federal high court; magistrate court; area court and customary court.

The federal executive council consists of the president, vice president, ministers, special advisers, and their assistants. There are 19 federal ministries, one of which is the federal ministry of Information and Communications. The Ministry works with the independent national regulator, Nigerian Communications Commission (NCC) that establishes the policies and regulatory framework that oversee the Nigerian telecommunications industry. The structure of the Nigerian government is presented in Figure 3.1 below.

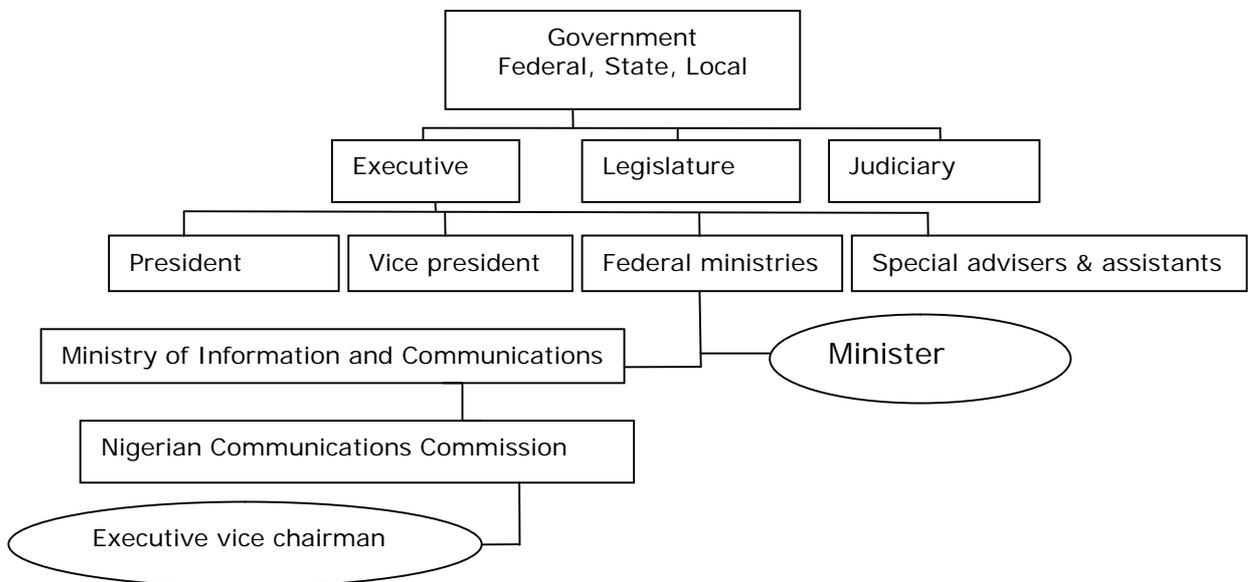


Figure 3.1: Structure of the Nigerian government  
Source: Pyramid research, 2009

The re-introduction of democratic rule into Nigeria in 1999 has helped to improve investor confidence in Nigeria, which in turn has led to an increase in foreign direct investment as a result of improvements in its strategic goals and stable foreign policy. Its stable foreign policy has made Nigeria a viable oil and gas producer which, as at 2011, accounts for about 9% of US oil imports. Nigeria has also made considerable progress by becoming a member of a number of international

organisations which include the United Nations and its related agencies, the International Monetary Fund (IMF), the World Bank – the International Bank for Reconstruction and Development (IBRD), the African Development Bank (ADB), the Organization of Petroleum Exporting Countries (OPEC), the World Trade Organization (WTO) and the Economic Community of West African States (ECOWAS). Other organisations include the African Union (AU), the Maritime Organization of West and Central Africa (MOWCA), the Commonwealth Nations, and the New Partnership for Africa's Development (NEPAD).

In positioning Nigeria as a key regional player within Africa, Nigeria helped in establishing the Economic Community of West African States (ECOWAS) in 1975. The organisation seeks to harmonise trade and investment practices within the 15 member states in West Africa. ECOWAS aims to promote economic integration in specific areas such as energy, agriculture, transport, commerce and telecommunications.

### 3.2.2 Economic Overview of Nigeria

The economy of Nigeria achieved a remarkable aggregate performance within the last decade in terms of changes in employment, productivity and poverty reduction from important sectors like industry, agriculture and services, just before the recession in the global economy in 2007. The Nigerian economy is divided into two groups, namely: the oil sector and the non-oil sector. The Gross Domestic Product (GDP) growth of Nigeria is highly correlated with developments in the oil sector. An increase in international crude prices in 2003 resulted in a 10.4% peak in annual real GDP growth. Between 2000 and 2005, Nigeria's economic growth has been driven by the rising and falling of oil prices as well as rapid growth in the agricultural sector. Although, according to National Bureau of Statistics report of 2011, the oil sector recorded a negative growth in the third quarter of 2011 due to decrease in oil production, the non-oil sector grew with major contributions from agriculture, telecommunications, manufacturing, finance, insurance and wholesale/retail trade sectors. The

real GDP growth of Nigeria between the first quarter of 1999 and third quarter of 2011 is presented in Figure 3.2 below.

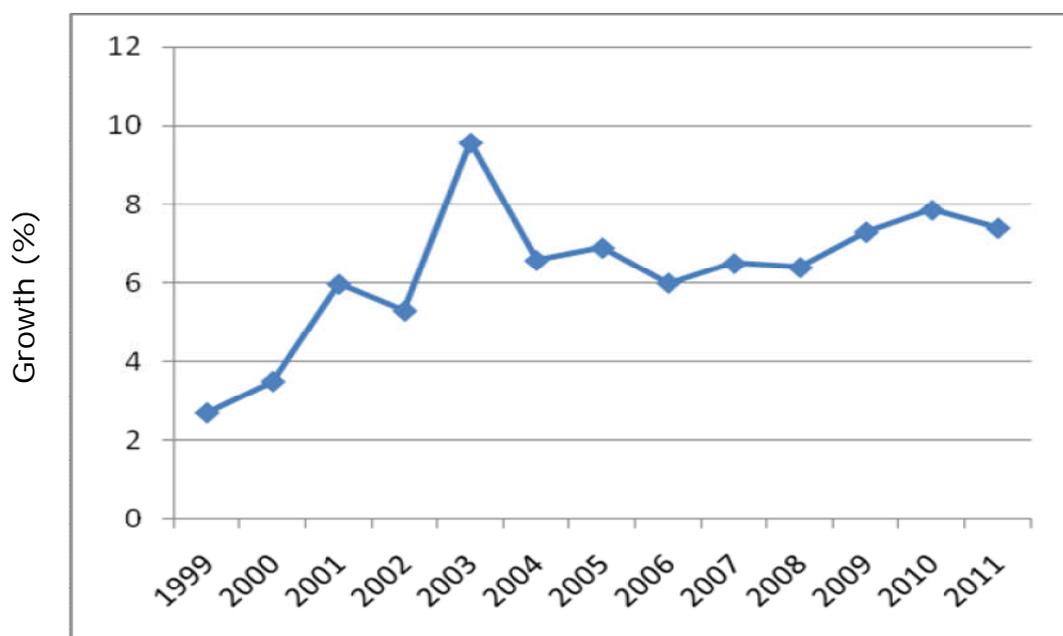


Figure 3.2: Real GDP growth rate in Nigeria (1999-2011)  
Source: National Bureau of Statistics, 2011

As shown in Figure 3.2 above, the GDP responded to the economic reform policies introduced by the federal government during which economic liberalisation and deregulation were adopted. The real GDP growth rate increased from 2.7% in 1999 to peak at 9.6% in 2003, and rebounded to 7.86% in 2010 to reflect the improved economic policies of National Economic Empowerment Development Strategy (NEEDS). In spite of the decline in the real GDP growth rate from 6.9% to 6.4% between the periods of 2005-2008, the major drivers remained agriculture, wholesale and retail trade and services sectors. The real GDP growth of the Nigerian economy grew by 7.4% in 2011, compared to 7.86% in 2010 when it was measured by the real GDP on an aggregate basis. The decrease in activities in the oil sector accounted for the 0.46% decrease in real GDP growth in 2011. However the nominal GDP for 2011 was estimated at NGN10, 205,085.18, compared to the NGN8, 009,807.76 recorded in 2010 which indicates an increase in the nominal GDP (CBN, 2012). However the real GDP growth rate has not been high enough to push down the poverty profile of Nigeria.

The federal government has also managed to make substantial progress with regards to inflation. The debt-relief deal that eliminated \$18 billion of debt in exchange for \$12 billion in payments - a total package worth \$30 billion of Nigeria's total \$37 billion external debt received in November 2005, helped drive down inflation. The consumer price index (CPI) peaked at 17.9% in 2005 and has significantly dropped to 10.3% as at December 2011.

The value of the Nigerian currency, the Naira, was worth an average of N129 per US dollar in 2006. The Naira continued to appreciate against the dollar until the last few months towards the end of 2008, when its value depreciated by 20%. This was mainly driven by a slowdown in the world's economy and a sharp decline in oil prices during 2008. Additional factors included the international concern regarding the stability and security in the Niger Delta region of the country as a result of militant activity since 2006. However, as at December, 2011 the Naira was worth an average of N158 per US dollar.

Due to the prolonged military rule Nigeria has experienced, the main challenge facing Nigeria's development is the deficiencies in its infrastructure. Since the return to civilian rule, the Nigerian federal government has invested into various sectors of the economy which include banking, telecommunications, education and agriculture. The federal government anticipated that through privatisation there would be an increase in financial investment across the country, as well as improvements in planning and management of the sectors.

On 1<sup>st</sup> January, 2012, the Nigerian government as part of its economic reform programme in deregulating domestic fuel prices, decided to remove fuel subsidies. This resulted in an increase of the pump price of fuel from N65 a litre to N150 a litre. This ignited anger amongst Nigerians, who regarded the oil subsidies as the only benefit they receive from the oil wealth of the country. Following threats to shut down oil production, the federal government reversed its decision with a partial reinstatement of the fuel subsidy. This lowered the pump price of fuel to N97 per litre. The partial reinstatement was assumed to be a temporary measure to end

the nationwide strikes and protests. The federal government wanted the subsidy removal to be part of an economic reforms programme, intended to reduce corruption, waste and smuggling in the oil industry. It was also meant to boost investment in the country's dilapidated refinery industry, thereby making Nigeria less dependent on fuel imports. The elimination of the fuel subsidy was not only a proposal by the government, but also recommended by the International Monetary Fund (IMF). The money saved from the oil subsidy removal was intended to be spent on improving the energy sector, the oil industry and social services.

### 3.2.3 Socio-demographic Overview of Nigeria

Nigeria has the largest population in Africa as it accounts for about 47% of West Africa's total population. With more than 150 million inhabitants, it is the eighth most populous country in the world. Over the last 10 years, Nigeria has experienced one of the highest rates of population growth. However, the UNDP expects the Nigeria's population growth rate to decline slightly, from 2.8% between the periods of 1975-2005 to 2.2% for the period of 2005-2015. Furthermore, according to the report from the population division of the Economic and Social Affairs of the United Nations, Nigeria's population was estimated to reach 210 million by 2025 and 289 million by 2050, making it the sixth most populous country in the world.

The total population of Nigeria between 2001 and 2009 is shown in Figure 3.3 below.

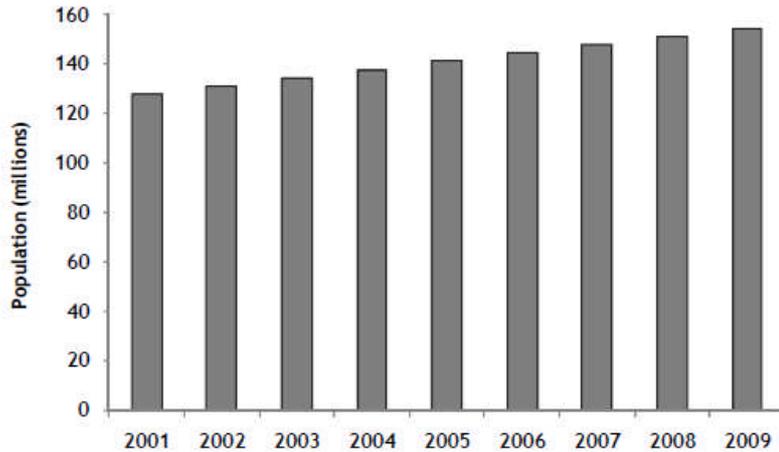


Figure 3.3: Total population in Nigeria, 2001-2009  
 Source: Pyramid research, 2009

As shown in figure 3.3, the population of Nigeria grew from 126,635,600 in 2001 to 149,229,100 in 2009. The population growth average between 2001 and 2009 was 2.4%. This figure is higher than Ghana at 1.8% and Cameroon at 2% (USAID, 2006). The total population puts Nigeria as the most populous country in Africa, above other African countries such as Ethiopia with a total population of 90,873,739 and Egypt with a total population of 82,079,636. The significant age-dependency ratio of 0.86 dependents per person is a sign of high fertility rates among Nigerian women, who usually give birth six times over her lifetime. This figure is slightly higher than the sub-Saharan Africa average of 5.5 births per woman over her lifetime (USAID, 2006).

The population of Nigeria is relatively young. According to the National Bureau of Statistics (2005) report, 42% of Nigeria's population were between 0-14 years of age, while 55% of the country's population were 15-55 years of age and the remaining 3% were over 65. According to Pyramid research (2009), about 39% of the total population in Nigeria constitutes the total working population. The total working population is presented in Figure 3.4 below.

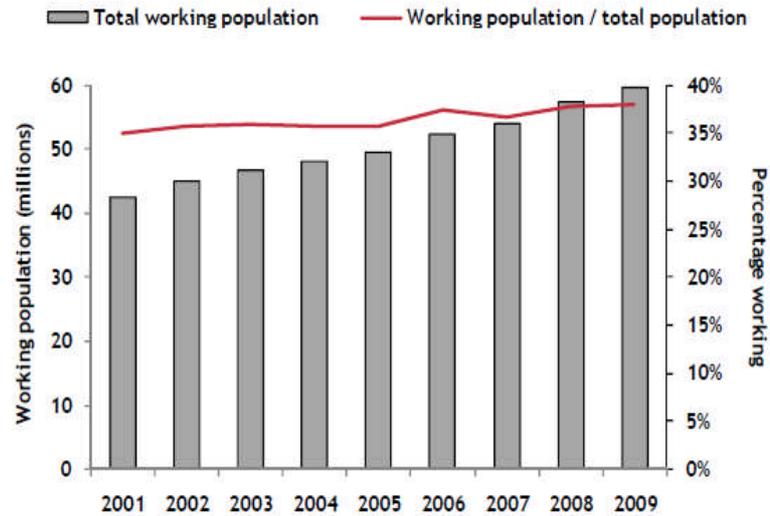


Figure 3.4: Total working population as a percentage of the total population in Nigeria, 2001-2009  
Source: National Bureau of Statistics, 2009

As shown in Figure 3.4, the total working population grew from 42.9 million in 2001 to 58 million in 2009. This figure shows that Nigeria has a large and young population. This has resulted in a high unemployment rate in Nigeria. According to the National Bureau of Statistics report, the national unemployment rate as at December, 2011 was 23.9%. The unemployment rate recorded was highest amongst youths aged between 15 and 44 years, with rural areas being more affected.

The gender distribution in the Nigerian population is relatively even. According to the National Bureau of Statistics report (2007), the breakdown of population by gender was 71.7 million males (51.2%) and 68.3 million females (48.8%). These figures are based on the national census carried out in Nigeria in 2006. According to the 2006 census, the geographical distribution of the Nigerian population showed that Kano and Lagos states had the highest number of inhabitants out of the thirty-six states in Nigeria. Kano state had a population of almost 9.4 million, accounting for 6.4% of the total population, while Lagos state accounted for 6% of the total population. Overall, it is estimated that about 64% of the Nigerian population live in rural areas which suffer from significant infrastructure gaps. Thus, rural-urban migration is prevalent in Nigeria.

### 3.3 Historical Perspective on the development of Micro and Small enterprises (MSEs) in Nigeria

MSEs are the backbone of all economies in both developed and developing countries and play a significant role in industrial development and economic growth (Adekule and Tella, 2008). A major setback in Nigeria's pursuit for industrial development has been the absence of a strong and vibrant MSEs sector. A country such as Nigeria with a population of over 150 million people, with vast productive and arable land, rich in various mineral resources including human resources should be a haven for micro and small enterprises to flourish with maximum profitable returns. Moreover, it also has an advantage in location as it is a focal point for marketing in West and East African countries (Onugu, 2005).

Given that the significant contribution of MSEs to economic development has long been recognised, almost all the Nigerian governments, both military and democratic governments have developed policies to encourage the MSEs sector. The MSEs sector became particularly important in Nigeria due to the introduction of austerity measures in 1982. The adoption of the economic reform programmes in 1986 led to a shift from large capital intensive enterprises to small business enterprises, due to their potential to generate wealth with low capital and boosting employment (Olusoji, 2006).

The MSE sector in Nigeria comprises micro and small enterprises, which are distinguished as small businesses and differentiated from large businesses. Most of the small businesses in Nigeria are family-owned with a low capital base and are located in urban, semi-urban and rural areas. The businesses within Nigeria's MSEs sector are primarily informal and usually engage in economic activities in all sectors of the economy.

As in developed economies, the issue of defining exactly what constitutes micro and small enterprises has also been addressed in Nigeria. According to the Central bank of Nigeria in its monetary policy report No.22 of 1988, small enterprises were defined as enterprises having an annual turnover not exceeding five hundred thousand naira (N500, 000). The federal

government, in its 1990 budget, defined small enterprises for the purpose of commercial bank loans as those enterprises with an annual turnover not exceeding five hundred thousand naira (N500, 000), and for the purpose of merchant bank loans, as those enterprises with capital investments not exceeding two million naira (N2, 000, 000) excluding land and buildings. The National Economic Reconstruction Fund (NERFUND) defined small enterprises as those enterprises with an annual turnover not exceeding ten million naira (N10, 000,000).

The introduction of the National Policy on MSMEs in Nigeria in 2005 addresses the definition of micro and small enterprises that this study adopts. This classification, which was also adopted by the small and medium enterprises development association of Nigeria (SMEDAN), defines the size category, number of employees and asset holdings and is presented in Table 3.1 as follows:

Table 3.1: Definition of Micro, Small and Medium enterprises in Nigeria

Size Category	Employees	Asset (in millions of Naira) Excluding land and buildings
Micro enterprises	Less than 5	Less than 5
Small enterprises	5 to 49	5 to less than 50
Medium enterprises	50 to 199	50 to less than 500

Source: National Policy on MSMEs, 2005

As shown in Table 3.1, all three categories play different roles in the Nigerian economy. According to the National policy on MSMEs, most of these enterprises are widespread across Nigeria and are dominated by wholesale and retail trade, manufacturing, vehicle repairing/servicing, transport, hotels and restaurants, building and construction.

As discussed in Chapter two, in both developed and developing economies, micro and small enterprises have been seen as a fundamental tool of economic growth and development. In Nigeria, the emerging results from several studies carried out by Ogujiuba, Ohuche and Adenuga (2004); Onugu (2005), Adeoti and Adeoti (2008) and Ihua (2009) have

demonstrated the significance of MSEs to a developing country. Furthermore, data from the federal office of statistics of Nigeria (2008) and the Central Bank of Nigeria (2009) revealed that about 97% of the businesses in the country are MSEs and they employ an average of 50% of the working population. This is further supported by the studies carried out by Aina (2007) and Ihua (2009) which found that 10% of the total manufacturing output and 70% of industrial employment is generated by MSEs in Nigeria. This shows that small businesses are important for growth and innovation in dynamic economies and cannot be disregarded in the economic development of any country. Small businesses in Nigeria are not just catalysts for economic growth, but are also the bedrock to the nation's development (Ariyo, 2005).

A major feature of small businesses in Nigeria is in its form of ownership. They are either sole proprietorship or partnership. Although some of the small businesses in Nigeria register as limited liability companies, they are in actual fact owned by a single man or joint ownership of two people. Although, partnership as a form of small business ownership is still in the infancy stage in Nigeria, individuals in business partnership usually pursue individual goals instead of being concerned with the overall interest of the small business. In addition, the high level of mistrust among people is one of the factors hindering business partnership in Nigeria.

Other features of small businesses in Nigeria include; management, capital requirement and local operation (Olusoji, 2006). The management of small businesses in Nigeria is generally organised by the owner. The owner usually acts as an owner-manager and takes decisions that he thinks is in the best interest of the business. The owner-manager is usually the investor, as well as the employer of labour for the business. The initial start-up capital for small businesses in Nigeria is relatively small compared to larger organisations. In most instances, the capital required to start-up small businesses is usually provided by friends and family relations. Small businesses in Nigeria are locally operated (Ekpeyong and Nyong, 1992). The owners and employees often live within the community in which the business is located. However, some small businesses operate

outlets outside the community in which the owner lives in order to seek markets for their products and services (Adegbite, 2001).

Small businesses in Nigeria were singled out by the federal government as being the key instrument for economic and national development. This occurred when Nigeria adopted the policy of indigenisation through the national development plan programme between 1970 and 1979. This development programme expressly stated that Nigerian economy needed to be self-reliant through industrialisation, entrepreneurial generation and employment generation. This allowed the federal government to provide the necessary support to meet the commitment in the development plan, as well as enhance their capacity to become a potential player in economic growth. The federal government provided support by establishing micro lending institutions, such as Nigeria Bank for commerce and industry (NCBI), National Economic Reconstruction Funds (NERF), People's bank of Nigeria (PBN) and National Export and Import Bank (NEIB). The liberalisation of the banking sector was also undertaken in order to support the growth and capacity building of micro and small enterprises (Fatai, 2011).

In addition, in 2001 the federal government established research institutes, such as the Raw Materials and Research Development Council (RMRDC) to undertake research and provide information to MSEs to enable them increase their effectiveness and efficiency in carrying out their business activities. Entrepreneurship education in higher institutions was also implemented to provide manpower support in terms of training for the MSEs (Onwualu, 2010).

In 2002, the federal government further intervened in developing the capacity of MSEs by introducing a direct investment policy, providing infrastructures such as industrial estate, as well as offering incentives and subsidies for micro and small enterprises (Olusoji, 2006). Furthermore, the establishment of the anti-corruption agency, such as the Independent Corrupt Practices and Commission (ICPC) and the Economic and Financial Crime Commission (EFCC) were additional efforts provided by the federal

government to support the capacity building of micro and small enterprises for economic growth and development (Omotola, 2006).

### 3.3.1 Problems of Micro and Small Enterprises in Nigeria

In spite of the efforts made by the federal government through incentives, favourable government policies and regulations to develop the micro and small enterprise sector, the contribution index of the sector to the gross domestic product (GDP) of the Nigerian economy is approximately 10% (Central bank of Nigeria, 2010). This shows that the MSE sector has performed below expectation, perhaps due to the several challenges which hindering this sector's development and capacity to enhance the economic growth of Nigeria. Some of the challenges may include poor marketing strategies, inadequate information, lack of planning, the absence of capital and inadequate technical know-how. Others may include challenges induced by the operating environment, such as poor access to credit facilities due to corrupt practices and inadequate infrastructural facilities for example: poor power supply, inadequate access to good road network, poor water supply and limited access to telecommunication network. According to Fatai (2002), the performance of the MSEs has been greatly hindered by the poor power supply and inadequate access to telecommunications networks. The implication of these two infrastructural problems has forced larger businesses to relocate to neighbouring countries, while smaller businesses are folding and failing. In effect, the poor state of these infrastructural facilities cannot stimulate the development of the MSEs in Nigeria, thus the government needs to intervene and restructure the infrastructures to enable the MSEs to perform to their capacity in enhancing economic development (Fatai, 2011).

Given that telecommunications services are important to the performance of small businesses, this study looks at the effect of the intervention of the Nigerian government in restructuring the telecommunications sector which has facilitated increased access to telephony to small businesses on

business performance and regional development. The next sections focus on the historical development and restructuring of the telecommunications sector in Nigeria.

### 3.4 HISTORICAL OVERVIEW OF THE NIGERIAN TELECOMMUNICATIONS SECTOR

The first telecommunications facilities in Nigeria were established in 1886 by the colonial administration. The facilities were geared primarily towards discharging the functions of the colonial administration rather than providing services for the socio-economic development of the country. In 1950, the total telephone lines in Nigeria were estimated to total fifteen thousand with connections to 98 local exchanges for a population of thirty to thirty-five million people. By the time of its independence in 1960, the total number of telephone lines in Nigeria had risen to 18,724 for a population of nearly 40 million people. This translated to a teledensity of about 0.5 telephone lines per 1,000 people. During this period, the telephone network was made up of 121 exchanges of which five exchanges were of the automatic type and 116 exchanges were manual (magneto).

The post-independence period witnessed the emergence of development policies geared towards improving the country's telecommunications network and services. The provision of telecommunications services was, until recently, the preserve of the public sector in Nigeria. Between 1960 and 1985, the telecommunications sector was made up of two divisions- the Department of Posts and Telecommunications (P&T), a commercial department of the Ministry of Communications which started out as a postal branch of the British Post Office in 1851 in charge of the internal network. The second division of the telecommunications sector was a limited liability company, the Nigerian External Telecommunications (NET) limited which was established by Cables and Wireless of the United Kingdom during the colonial era. This was in charge of the external telecommunications services NET and was responsible for providing access to the outside world. By the end of 1985, all the telephone exchanges

were analogue, while the installed switching capacity totalled about 200,000 lines compared with the intended target of 460,000 lines. The telephone penetration of one telephone line to 440 people was appalling and below the ITU recommendation for developing countries, namely one telephone per 100 people. During this period, the quality of the telephone service was poor, unreliable, expensive, and congested and not customer friendly.

Based on the foregoing, in December 1984, the telecommunications arm of the Posts and Telecommunications departments was detached from its postal affiliate and merged with NET to form Nigerian Telecommunications Limited (NITEL); an autonomous public company incorporated under the companies' decree of 1968. By 1<sup>st</sup> January, 1985, NITEL formally commenced business. The primary objective of establishing NITEL was to harmonise the planning and management of the internal and external telecommunications services, cut back on investments in telecommunications development as well as providing accessible, affordable and efficient services. In 1992, NITEL was commercialised and renamed NITEL plc.

The political instability in Nigeria also contributed to the underdevelopment of the telecommunications sector for more than three decades after independence. After 43 years of independence, the NITEL had an estimated installed base of 650,000 telephone lines across 800 switches available to over 100 million people. Only half of these lines are typically operational due to network issues, with most of the network consisting of a mixture of old to obsolete equipment. NITEL had a monopoly in the sector, being the only national carrier. It was characterised by epileptic services as well as bad management.

Following elections in 1999, the democratic elected government focused on ensuring political stability, strengthening democratic practices, and tackling corruption. The elected government also embarked on a comprehensive economic reform programme with priority placed on the privatisation and liberalisation of the telecommunications sector. The economic, financial and technological importance of the

telecommunications sector to the Nigerian economy, led the federal government of Nigeria in its decision to privatise its state-owned company by selling it to private investors, as well as the introduction of competition into the telecommunications market. This proactive approach has allowed the Nigerian population to benefit from transparent and non-discriminatory access to telecommunication services.

### 3.5 THE RESTRUCTURING OF THE TELECOMMUNICATIONS SECTOR IN NIGERIA

The trend worldwide is towards the liberalisation and privatisation of the telecommunications industry (Park et al, 2002). In most developing countries, privatisation and liberalisation of telecommunications services have been pursued with different speed and success (Stern, 2000). Until recently, telecommunications infrastructure and services were usually owned and operated by the government of developing nations. Due to the poor performance of the sector in many developing economies, there was pressure to liberalise the telecommunications markets (Wallsten, 2003). The International Monetary fund and the World Bank promoted liberalisation in developing countries, as it was viewed as key to economic recovery, in view of the fact that a competitive market with a rich offering of highly developed telecommunications services would support modern economic activity as well as make the countries more attractive to foreign investors.

In this light, the Nigerian telecommunications industry was restructured. The Nigerian telecommunications industry structure, as illustrated in Figure 3.5, consists of the federal government of Nigeria, the ministry of communications, the Nigerian telecommunication limited, the second national operator Globacom, other licensed private telecommunication operators and service providers.

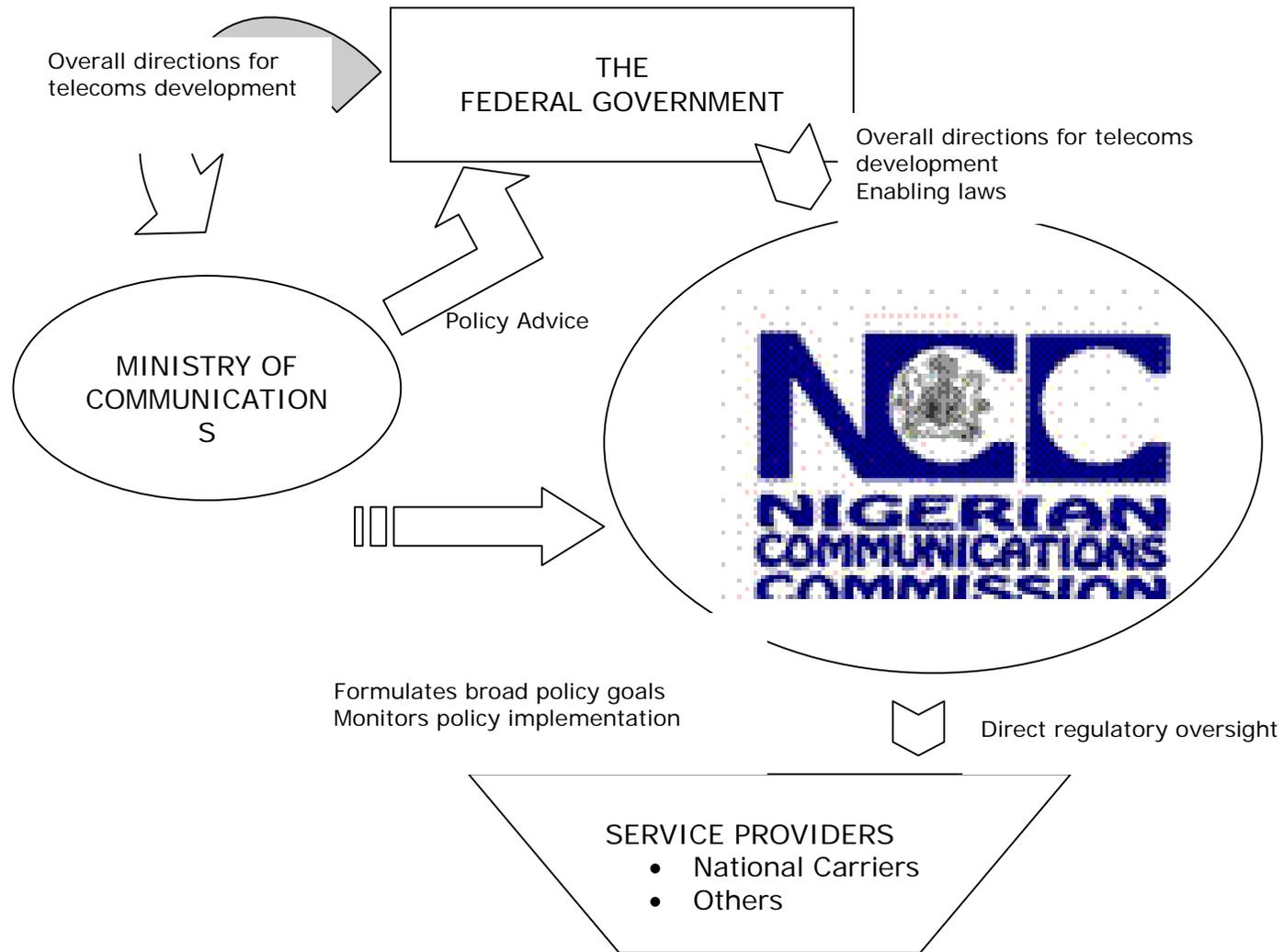


Figure 3.5: Telecommunications Industry Structure  
Source: Nigerian Communications Commission, 2004

The role of the federal government in the telecommunications industry includes: providing an overall direction for telecommunications development; ensuring policy consistency of telecommunications with other national policies; and enacting fundamental laws as well as taking other measures in support of the National Telecommunications policy. The ministry of Communications, which represents the Federal Government on matters pertaining to regional and international organisations, determines and monitors the implementation of government policies within the industry. The Ministry of Communications supervises the national carriers and the Nigerian Communications Commission, the regulatory organ. The restructuring of the telecommunications sector in Nigeria was stimulated by the inability of the federal government to continue to finance public enterprises due to declining resources. There was also the need to create conditions for the development of the communication and information infrastructure required to improve operational efficiencies in all sectors of the economy, as well as ensuring affordable access to telecommunications services. The Nigerian Telecommunications sector reform has been pursued through liberalisation, deregulation and privatisation. This has resulted in a shift from state-owned enterprises to private sector driven activities. The telecommunications market reform in Nigeria progressed through several administrative, structural and operational changes since independence through three successive national development plans. The first major reform process was the detachment of the telecommunications division from the Post and Telecommunications department in 1985 and the establishment of an autonomous public monopoly company, Nigeria Telecommunications Limited (NITEL), a merger of the Telecommunications division of the Post and Telecommunications department and the Nigeria External Telecommunications (NET) (Ndukwe, 2005).

In 1987, a seminar on the restructuring of the telecommunications sector led to the first National Telecommunications policy, in which the policy recommendations made included the privatisation of the state-owned telecom company NITEL; the deregulation and liberalisation of the telecommunications industry as well as the creation of the National regulatory organ. In 1992, the federal government created the Nigerian

Communications Commission (NCC) and through the promulgation of Nigerian Communications Commission introduced private participation in the provision of telecommunications services in Nigeria (Jerome, 2002). A few years down the line, there was partial deregulation of the telecommunications sector through the introduction of competition in fixed wireless in 1997, through the licensing of private (fixed) telephone operators (Ndukwe, 2005).

The introduction of competition into the mobile telephone market occurred in 2001, with the licensing of three Digital Mobile (GSM) operators. In 2002, the second national carrier, Global Communication Limited (Globacom) emerged, with the authority to run a GSM network which up till then was provided by NITEL - the only national carrier in the country (Adomi, 2005). The private operators in Nigeria's telecommunications sector and their key activities between 2001 and 2009 are presented in Table 3.2 below.

Table 3.2: Private operators in the telecommunications sector and their key activities, 2001-2009<sup>1</sup>

Year							
2001	<p>February: Was awarded digital mobile GSM license by NCC at a cost of \$285m</p> <p>May: Launched commercial services on may16, 2001 in Port Harcourt, Lagos, and Abuja</p>	<p>February: Awarded digital mobile GSM license by the NCC at a cost of \$285m</p> <p>August: Launched commercial services</p>	NA	<p>February: Awarded digital mobile GSM license by the NCC at a cost of \$285m</p> <p>Mtel merged with Nitel</p>	NA	NA	NA
2002	NA	NA	<p>September: Glo Mobile was awarded digital mobile license at a cost of \$200m as part of its multiple licenses (national carrier services, mobile services, long distance communications and fixed wireless services.) Also was issued international gateway and national carrier license alongside Nitel</p>	<p>First attempt to privatise Nitel/Mtel, but the preferred bidder, UK based Investment International Limited failed to pay for the 51% stake</p>	NA	NA	NA
2003	<p>December: Third operator to introduce per-second billing</p>	<p>November: Introduced per-second billing.</p> <p>December: Vodacom won court case over acquisition of Econet wireless.</p>	<p>August: Launched commercial services over 2.5G network.</p> <p>Became first operator to introduce per-second billing.</p>	<p>April: Appointment of Pentascope to manage Nitel/Mtel.</p> <p>December: Mtel rolled out GSM services to the capital cities of all 36 states. Also introduced per-second billing.</p>	NA	NA	NA
2004	NA	<p>April: Econet rebranded to Vee networks (was trading as V-mobile) after acquisition of a controlling stake by Vodacom.</p>	<p>Glo Mobile introduces GPRS with WAP. In just nine months of services, Glo Mobile became the fastest growing mobile operator, with 1m subscribers across 60 municipalities.</p> <p>August: Announced plans to invest in fibre-optic submarine cable.</p>	<p>June: Second privatisation attempt commenced</p>	NA	NA	NA

Table 3.2: Private operators in the telecommunications sector and their key activities, 2001-2009 continued<sup>1</sup>

Year							
2005	September: Rolled out GPRS services	NA	September: Rolled out GPRS/GSM services	Pentascop contact was cancelled. May: Mtel's subscriber total peaked at 1.2m and its market share at 8%	NA	NA	NA
2006	NA	May: Celtel International acquired majority stake (65%) in Vee Mobile.  September: Rebranded to Celtel.	NA	Majority Stake (51%) in Nitel was sold to Transcorp.	NA	March: Launched fixed wireless services based on CDMA and 3G EVDO mobile broadband data service.	NA
2007	March/April: Was awarded a 3G UMTS license for a 10MHz block in the 2GHz band at a cost of \$150m.	March/April: Was awarded a 3G UMTS license for a 10MHz block in the 2GHz band at a cost of \$150m.	March/April: Was awarded a 3G UMTS license for a 10MHz block in the 2GHz band at a cost of \$150m.	NA	January: Was issued a unified access license by the NCC (GSM900/1800MHz) at a brand price of \$400m.	Redefined mobile and fixed voice service. Introduced freedom roaming tariffs.	June: Acquired Cellcom.  August: Awarded unified access license (800MHz spectrum) by the NCC, which allows it to offer fixed and mobile services.
2008	May: Launched DVB-H TV service.	August: Celtel was rebranded as Zain following the global acquisition of Celtel International by MTC.	August: Hit the 20m subscriber mark.  September: Launched Internet packages over 3G plus network.	February: Transcorp shares were suspended from the Nigerian Stock Exchange (NSE).	March: First official call on the network.	July: Starcomms listed on the Nigerian stock exchange.  November: Reached the 2m subscribers mark.	September: Crossed the 1m subscribers' landmark after 6 months and 2.5m after 10 months.
2009	June: Launched IP-based connectivity.	February: Zain launched 3G service in Nigeria.  April: Announced plans to migrate to all IP network.  October: Signed network management deal with Nokia Siemens Networks	January: Reduced International calling rates by 70%.  October: Announced expansion of its network coverage to cover remote communities.	February: Transcorp started divesting its stake in Nitel.	April: Raised N15bn in a private placement.  June: Subscribers hit 1m mark 7months after it launched operations.	February: Introduced missed call notification service and call waiting.	February: Launched voice SMS service and introduced free late night calls.  July: Agreed with Nokia to introduce dual-band mobile CDMA handsets.

<sup>1</sup>Source: Pyramid research, 2009

### 3.5.1 The Reform Process

The federal government of Nigeria pursued a four-phased reform programme in the restructuring of the telecommunications sector: introduced a new telecommunications policy; designed a new legal and regulatory framework; promoted an independent regulator; and privatised the state-owned company-NITEL. As a result, the Telecommunications sector Reform Implementation Committee (TSRIC) was inaugurated in February 2000 by the National Council of Privatization (NCP) to facilitate the process of restructuring the telecommunications sector and the privatisation of NITEL. The review and formulation of a new telecommunications policy was prioritised as an initial major step, based on the economic reform philosophy of the federal government of Nigeria which proposed that the government should only legislate, regulate, impose and collect taxes rather than be an operator in the telecommunications sector. The new telecommunications policy was drafted and adopted by the TSRIC and subsequently approved by the federal executive council in September 2000 following extensive consultations with major stakeholders in the telecommunications industry, such as the Ministry of Communications, Nigeria Communications Commission, Nigeria Broadcasting Corporation and private telecommunications operators (NCC, 2005).

The privatization of NITEL was supposed to be the final step in the telecommunications reform process in Nigeria. The inability of NITEL to compete with the private sector operators in the telecommunications markets provided the rationale behind privatisation. Although plans to privatise the fixed incumbent NITEL and its mobile arm Mobile Telecommunications Limited (Mtel) were unsuccessful, policymakers undertook a number of measures that produced open, competitive markets in a number of market segments. The National Council of Privatization (NCP) accepted the decision to commission due diligence studies on NITEL, which were meant to shed light on the technical and financial status of the public company. Moreover, it was designed to serve as a measurable guide for the successful implementation of the privatisation of NITEL. The main objectives of the federal government,

through the privatisation programme, was to transfer the controlling shares in NITEL to the private sector for ensure better management and efficiency, allow access to new technology and increase tax revenue in the future for the government. The federal government also considered that selling NITEL to suitable investors could revitalise the public company and provide efficient telecommunications services. In addition, it would effectively compete with other private operators.

In 2006, a 51% stake in NITEL was sold to the Transnational Corporation of Nigeria (Transcorp) for \$500 million. The Transcorp deal was however terminated due its failure to improve NITEL's position in the market as agreed in the contractual agreement between it and government. In 2008, the government initiated another move to sell NITEL and eventually sold it to the New Generation Telecom Consortium in 2010. The deal with New Generation Telecom was eventually revoked due to charges of corruption and mismanagement against New Generation telecom officials.

As at February, 2012, the National Council on Privatisation (NCP) approved the latest method of selling off NITEL, a process called the 'Guided Liquidation' approach. According to the Bureau of Public Enterprises (BPE), "the National Council on Privatisation has approved 'guided liquidation' as the strategy for the privatisation of Nigerian Telecommunications Limited and its mobile arm, M-TEL, in view of the huge liabilities of both companies" (Ndukwe, 2005).

### 3.6 THE REGULATORY BODY OF THE NIGERIAN TELECOMMUNICATIONS SECTOR

The liberalisation of the telecommunications industry of any country can facilitate economic growth across various sectors, but its success is dependent on the regulatory policies which are favourable to the development of competition.

According to Nweke (2008), an aspect that has driven the progress of the liberalisation of the telecom sector in Nigeria has been the positive regulatory body. The telecommunications sector is a significant element of economic growth and as such its development became very important. In view of this, Nigeria joined the global trend to liberalise the sector with the establishment of the regulatory body – the Nigerian Communications Commission (NCC) in 1992.

The NCC is the autonomous regulator of the telecommunications industry. NCC is responsible for the approval of standards and is authorised to issue licenses, allocate frequencies and regulate all telecommunications operators and service providers. It designs and maintains a national numbering plan, and carries out other regulatory tasks consistent with its authorisation to promote the development of Nigerian telecommunications.

The Organisation Structure of Nigerian Communications Commission consists of fifteen departments, including four departments under the human capital and infrastructure group. The Nigerian Communications Commission's organisational structure is presented in Figure 3.6 below.

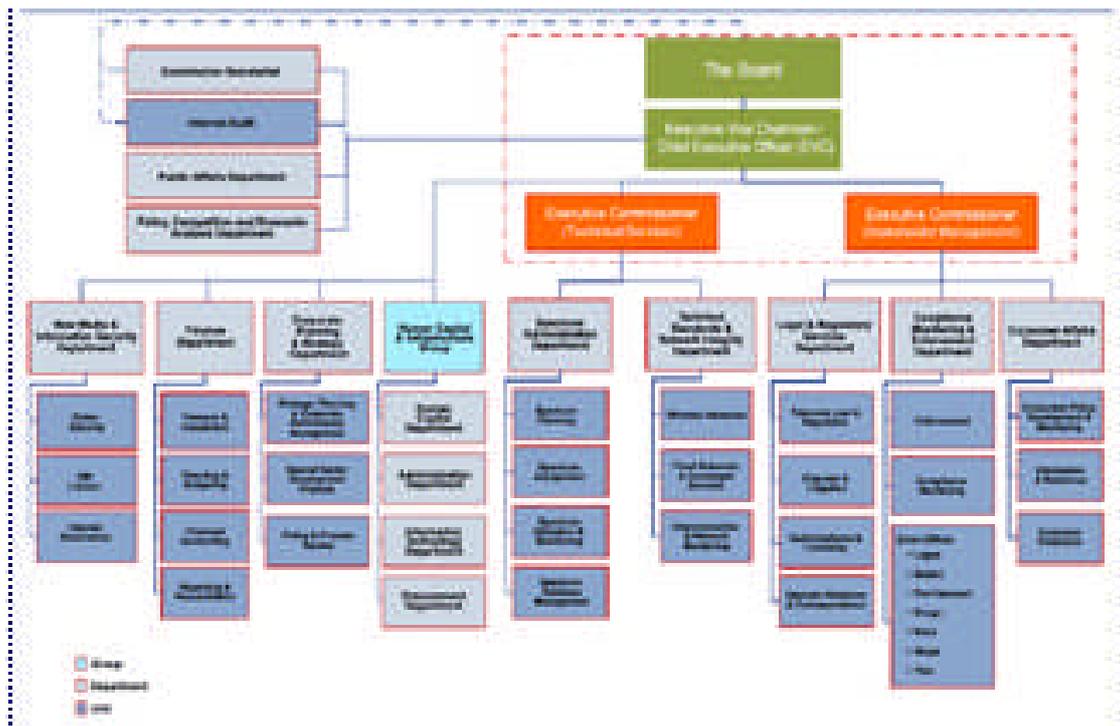


Figure 3.6: Organisational Structure on Nigerian Communications Commission

Source: Nigerian Communications Commission, 2011

As shown in Figure 3.6, the executive vice chairman (EVC) is the chief executive officer of the commission and directly supervises nine departments, including the human capital and infrastructure group and the independent internal audit unit. The executive commissioner-technical services (ECTS) directly oversee the departments in charge of technical standards, spectrum and engineering issues governing the telecommunications industry in Nigeria. The executive commissioner–stakeholder management (ECSM) supervises the departments charged with the responsibility of addressing the needs of telecommunications industry stakeholders including vendors, service providers and consumers. The board of commissioners consists of the executive vice chairman and has two executive commissioners as members and is charged with the governance of the Nigerian Communications Commission. It has oversight functions over all of the Commission's activities.

### 3.6.1 Nigerian Communication Commission Objectives and Regulations

The commission's responsibility is to ensure the provision of adequate telecommunications services throughout the country as well as to promote competition among service providers in the telecommunications industry. The vision of the NCC is to act as an information rich environment, whose industry regulation activities can be comparable globally to other world class regulatory organizations. Its mission is to promote universal access, as well as support a market driven telecommunications industry (NCC, 2010).

Upon the establishment of the NCC, its objectives were determined as follows:

- To promote the implementation of the national communications or telecommunications policy, this may be modified and amended from time to time.
- To establish a regulatory framework for the Nigerian communications industry and create an effective, impartial and independent regulatory authority.
- To promote the provision of modern, universal, efficient, reliable, affordable and easily accessible communications services and the widest coverage throughout Nigeria.
- To encourage local and foreign investments in the Nigerian communications industry and the introduction of innovative services and practices in the industry in accordance with international best practices and trends.
- To ensure fair competition in all sectors of the Nigerian communications industry and also encourage participation of Nigerians in the ownership, control and management of communications companies and organizations.
- To encourage the development of a communications manufacturing and supply sector within the Nigerian economy and also encourage effective research and development efforts by all communications industry practitioners.

- To protect the rights and interest of service providers and consumers within Nigeria.
- To ensure that the needs of the disabled and elderly persons are taken into consideration in the provision of communications services.
- To ensure an efficient management, including planning, coordination, allocation, assignment, registration, monitoring and use of scarce national resources in the communications sub-sector, including but not limited to frequency spectrum, numbers and electronic addresses, and also promote and safeguard national interests, safety and security in the use of the said scarce national resources

Current regulations implemented by the NCC include:

- Type approval regulations
- Numbering regulations
- Telecommunications networks interconnection regulations
- Competition practices regulations
- Quality of services regulations
- Universal access and universal service regulations
- Consumer protection regulations
- Deployment of Wi-Fi
- Frequency spectrum (fees and pricing)

The Nigerian Communications Commission initially began licensing private telecom operators in 1996. However, due to political instability in the country, caused by long military rule government at the time, the market's potential was not utilised and it continued to suffer from under-investment. Due to the new telecommunications policy introduced in 2000, NCC was empowered to regulate the telecommunications sector and carry out other authorised tasks. The activities carried out by the Nigerian Communications Commission in awarding licenses and concessions to private operators in Nigeria between 2000 and 2009 are presented in Figure 3.7 below.

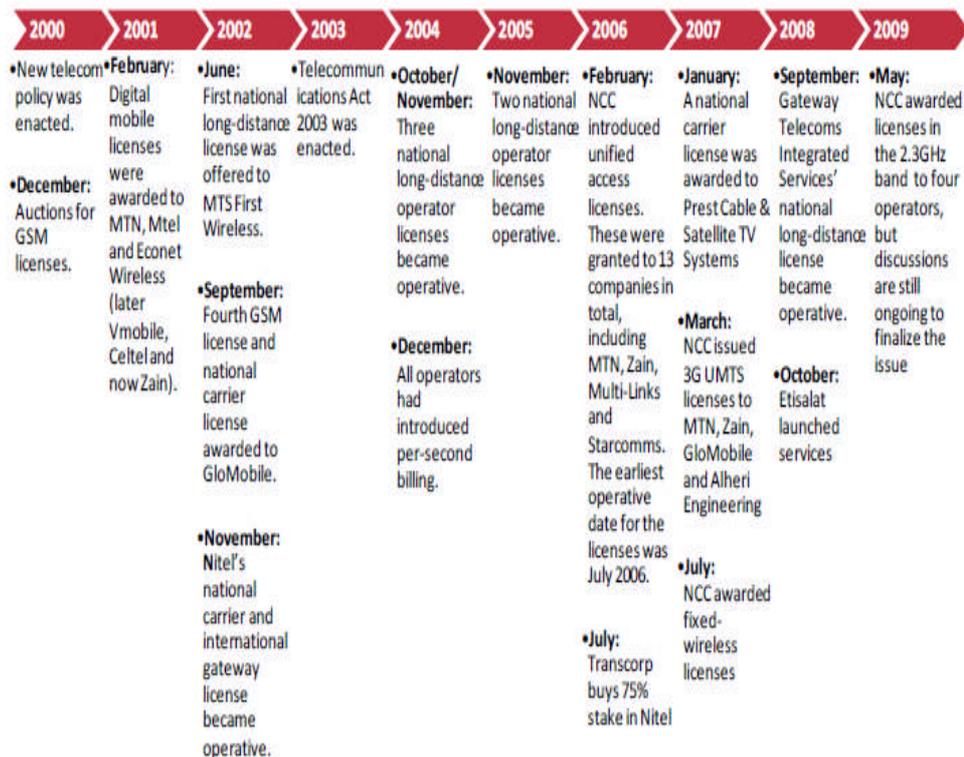


Figure 3.7: Activities of Nigerian Communications Commission, 2000-2009

Source: Nigerian Communications Commission, 2010.

As presented in Figure 3.7, the NCC awarded digital mobile licenses in the GSM900 and GSM1800 bands for an initial period of 15 years to four companies: MTN, Communications Investment Limited (CIL), Econet Wireless (formerly V-Mobile, Celtel and now Zain) and Mobile Telecommunications Limited (Mtel Ltd) in February 2001. The license given to CIL was revoked following its inability to pay the full sum of \$285m for its licensing fee. Between May and August 2001, MTN and Zain launched their service and installed their networks across the thirty-six states in Nigeria. Glo Mobile also received a digital mobile GSM (Global System for Mobile Communications) and a national carrier license to provide service to all parts of the country in 2002. The Nigerian Communications Commission Act of 1992 was replaced by the Nigerian Communications Commission Act which was passed in 2003. This new act granted the regulator more independence and power to control the telecommunications industry. The NCC launched unified access service licenses with a single concession for the provision of fixed, mobile and other telecommunications services for a period of 10 years in 2006. These

licenses were granted to thirteen companies, including two major private operators, MTN and Zain. The unified access service license replaced the existing licenses granted to GSM operators in 2001. The introduction of unified access service licenses was a major change in the telecommunications market as it ended the restricted period of the private operators in the provision of mobile telecommunications services. In 2007, CDMA operators were also granted a unified access service license to compete in both fixed-line and mobile telecom markets. These have resulted in the CDMA operators dominating the fixed-line telecom market, while also extending their services into the mobile telecom markets.

In January 2007, a business development and investment company based in Abu Dhabi, Mubadala Development Company, was issued a license for the provision of mobile, fixed and broadband services. Etisalat joined Mubadala in 2008 as its operational partner in Nigeria to launch a mobile GSM service. In 2007, the NCC awarded UMTS licenses to four private operators, three mobile operators: MTN Nigeria, Glo Mobile, Zain and a long-distance fixed operator, Alheri Engineering in the 2GHz band. The licensed private operators have launched 3G services in Nigeria with the exception of Alheri Engineering.

In 2009, NCC announced plans to start registering all GSM-enabled SIMs by the first quarter of 2010. The SIM registration took off by mid-2010 with campaigns stating that all unregistered SIM cards would be disconnected. Recently, NCC established a committee to implement mobile number portability (MNP) for mobile networks in Nigeria. The private operators MTN and Zain have also applied for mobile banking licenses from the Central Bank of Nigeria (CBN) in order to expand into mobile banking services. Private operators believe that mobile banking services will add value to their subscribers.

### 3.7 OVERALL SECTOR GROWTH

The telecommunications sector in Nigeria is presently undergoing rapid change and explosive growth. The resulting competition by private operators has brought substantial benefit to subscribers within a few years of the restructuring of the telecommunications sector in Nigeria. The telecommunications sector delivers to both residential and business customers, thereby eliminating the long waiting list of people demanding telephone lines. Moreover, the telephone tariffs for local and international calls are ranked amongst the lowest in Africa.

The Nigerian telecommunications sector has received global commendation and has been ranked the largest and fastest growing telecommunications market in Africa and among the ten fastest telecommunications growth markets in the world. The total subscriber base for connected fixed and mobile lines rose from 866,782 in 2001 at the end of December 2001 to 124,801,018 by the end of 2011, with an average growth rate of 125% annually. Overall, the total subscriber base for active fixed and mobile lines was 95,886,714 by the end of 2011. Reform of the Nigerian telecom sector has facilitated an increase in the penetration of telephone lines. Nigeria's teledensity<sup>6</sup> has grown from near zero at the turn of the millennium to almost 69% in the last eleven years (NCC, 2012). The number of active telephone lines and rate of telephone penetration (teledensity) is presented in Figure 3.8 below.

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<sup>6</sup> Teledensity is a measure of the penetration of telephone lines within a country.

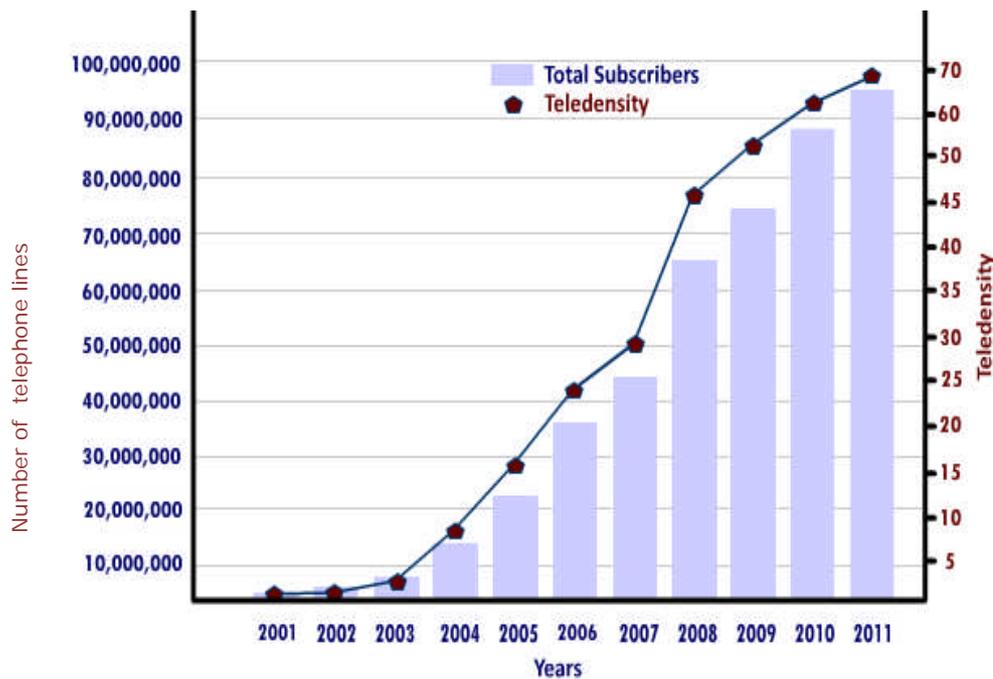


Figure 3.8: Telephone lines and Teledensity in Nigeria (2001-2011)  
 Source: Nigerian Communication Commission, 2012

The telecommunications sector in Nigeria has witnessed extensive growth which has been evidenced from the consumers' needs, not just for the telephone lines, but also for high quality services from the private sector operators. The private sector operators in their bid to provide good quality telephony services have continuously invested in the telecommunications infrastructure. This extensive growth in the telecommunications sector is due primarily to the competition in signing up new consumers by the mobile operators and their fixed counterparts. The private sector operators are presently engaged in rolling out, powering and securing their networks further into underserved and unserved parts of the country, particularly rural areas.

The telecommunications market in Nigeria is divided into urban, semi-urban and rural markets (Bello, 2012). Teledensity in the urban market is about 65%, while the semi urban market is about 45% and the rural market is less than 15%. The product segmentation includes fixed, mobile (GSM) and mobile (CDMA). The major players in the market include MTN, Airtel, Globacom, Mtel and Etisalat. The market share of private operators in Nigeria as at December 2011 is presented in Figure 2.9 below.

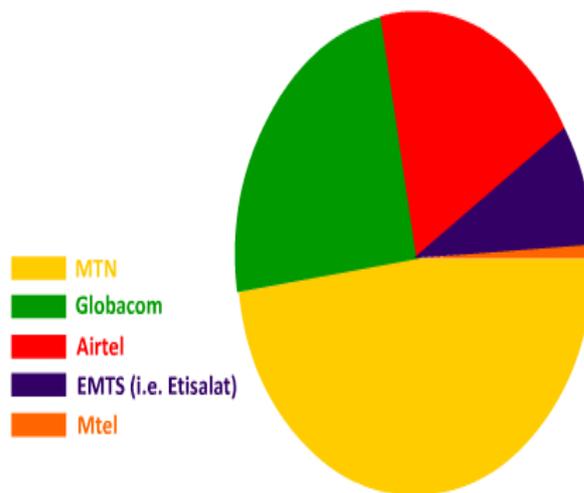


Figure 3.9: Market share of private operators in the Nigerian Telecommunications Industry  
 Source: Nigerian Communications Commission, 2012

As shown in Figure 3.9, MTN is the market leader with 46% of the total subscription, followed by Globacom (22%), Airtel (20%), Etisalat (12%) and Mtel (0%). MTN has been able to maintain its leading position as the largest private operator in terms of subscriptions by continuously investing in network rollouts. MTN also introduced various value-added services, such as mobile TV, MTN google, video camera, mobile internet as well as a SIM backup service.

Airtel overtook Globacom as the second largest player in the telecommunications market following its rebranding exercise in 2008. A major contributor to Airtel's success was the introduction of its ultralow-cost handset project, which market phones in the Nigerian market with prices as low as \$20. This resulted in Airtel acquiring more than one million customers within nine months. In addition, Airtel focused on community initiatives such as providing value-added services and offers such as on-net tariff discounts to the Nigerian police and military. However, around the second quarter of 2009 Airtel gained fewer subscribers than Globacom, thereby making it fall to third position by the end 2009.

Globacom's market share has increased significantly from 9.3% in 2003 to 22% in 2011. This has been attributed to its competitive network rates. Globacom focuses on the provision of innovative packages such as bonus airtime and low roaming charges. It aims to provide affordable services to Nigerian masses, which it demonstrated by being the first private operator to launch per-second billing in 2003. Globacom also introduced lower-denomination scratch cards and innovative packages that have allowed low-income earners to pay for their starter phone packs by instalments.

Etisalat reached the one million subscription mark within one year after its commercial launch. Etisalat focused on marketing, value-added services and quality of service, as well as differentiating its services so as to attract subscribers from established private operators. Mtel is lagging due to the financial challenges that NITEL, its controlling company has been facing, as well as the lack of infrastructure investment. Mtel's market share dropped from 10.7% in 2001 to 0% in 2011.

According to Pyramid (2009), since the liberalisation of the sector in 1999 the telecommunications industry in Nigeria has seen great improvements in its performance, such as competition within the industry; increased revenue generation for the government; and the creation of employment opportunities. The industry has also experienced an increase in demand. This is due to the population explosion in urban cities and metropolises, business purpose, an increase in the number of SMEs created, improved banking operations as well as a reduction in the subscription cost.

Before 2001, a NITEL line cost over sixty thousand naira each but after the issuance of the GSM license in mid-2001, one telephone line costs N20, 000 per line. As at December 2011, the figure has dropped to almost zero. The tariff for calls on the GSM network was N50 per minute as at 2001, but by the end of 2011, the cost for calls between mobile networks dropped to as low as N12 per minute. CDMA and fixed wireless tariff are even lower. On the supply side, product availability has been encouraging

compared to 1999. However, in terms of service and customer satisfaction, it has not been so satisfactory.

Despite significant developments in the telecommunications industry, it is plagued with problems which include: high import duty which on telecommunications equipment ranges between 30 to 70 percent; anti-competitive practices, with some private operators alleged to be forming alliances to frustrate the natural interplay of market forces; the type and quantum of funds needed by private operators to expand operations is scarce locally; poor public power supply, high operational costs and poor security such that telecommunications infrastructures are frequently vandalised (Tella et.al., 2007).

### 3.8 THE TELECOMMUNICATIONS SECTOR AND THE NIGERIAN ECONOMY

The telecommunications sector has become one of the largest creators of new employment within Nigeria. Telecommunications operators contribute to the Nigerian economy by creating workplaces and jobs that rely on the distribution of telecommunications technology and services. This contribution also takes the shape of employment beyond the telecommunications operator ranks, by enhancing entrepreneurship, productivity and other commercial skills. Competition amongst private operators has provided millions of new jobs and improved the professionalism of the industry. Due to the crash in the price of SIM cards in 2004, the number of subscribers is increasing, with greater income available to many operators through the sale of recharge cards. Its multiplier effects on the economy are significant, leading to increased supply and demand for telecommunications products and services in Nigeria.

According to NCC (2008), reports show the telecommunications sector directly employs about 8,800 professionals and is indirectly responsible for a total of more than three million jobs. Indirect employment within the sector includes the ubiquitous “umbrella people”– airtime resellers found on most street corners around the country, mini call centre operators,

third party site engineers, roadside recharge card hawkers, handset distributors, security personnel and PR agencies. The workforce related to the telecommunications sector in Nigeria is presented in Figure 3.11 below.

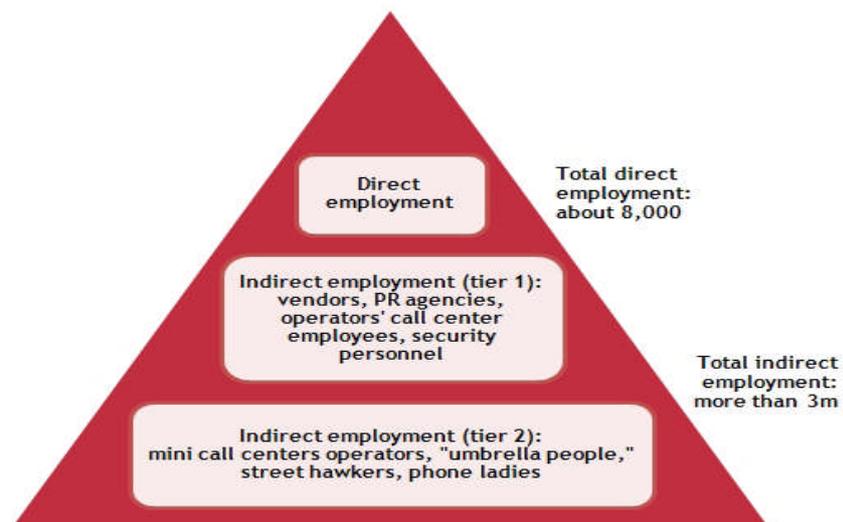


Figure 3.10: Employment within the telecommunications sector in Nigeria  
Source: Pyramid research, 2009

With regards to the telecommunications industry and the GDP, the telecom services market has become a key pillar of growth. According to the National office of statistics in Nigeria, reports show that the sector growth of the telecommunications component of the GDP increased from 8% to 36.4% between 2000 and 2011. Moreover, the sectoral contribution to the GDP by the telecommunications sector increased from 0.11% in 2000 to 5.96% by the end of 2011. The total contribution of the telecommunications industry to the GDP constituted 3.66% in 2009; this was a sharp increase from the 0.62% experienced in 2001. The telecom industry's contribution to the national GDP has witnessed the fastest growth during the 2000-2009 period. The percentage contribution of the telecommunications industry to national GDP between 2000 and 2009 is presented in Figure 3.12 below.

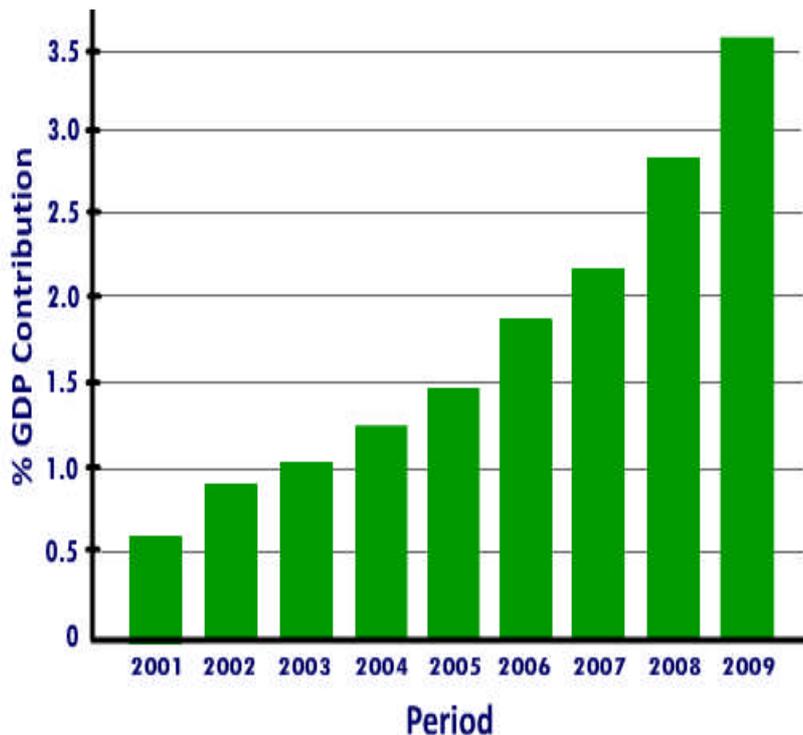


Figure 3.11: Percentage contribution of the telecoms industry to national GDP, 2000-2009

Source: Nigerian Communications Commission, 2012

Furthermore, the development in the telecommunications sector has had significant impact on the other sectors of the economy. The activities of the financial sector have been expanded much more by telecommunications. Most banks have been beneficiaries of the quantum of transactions catalysed by telecommunications services in commercial banking services. In the improvement of investment portfolios, the financial sector has done extremely well as most banks are involved in one loan syndication or another. The most recently formed was in March 2011, in which eight Nigerian banks were involved in a loan syndication of US\$650 million for a private operator, Etisalat (NCC, 2011).

In facilitating banking transactional services, the telecommunications industry has provided the bedrock for the finance industry. Electronic banking facilities such as ATM services, internet banking, and international debit and credit card facilities are ways in which the telecommunications industry has aided the growth, security and speed of transactions in the Nigerian financial sector.

The media industry has also been positively impacted by the telecommunications industry in Nigeria. The volume of advertisements, and media related business activities are traded off on account of telecommunications services and products (Nigerian Communications Commission, 2009).

The accelerated growth of the telecommunications sector in Nigeria has also given rise to an influx of telephone handsets into the Nigerian market. Almost every type of telephone handset can be found within the country and they are accessible to consumers irrespective of their income category. Recently, the Nigerian government anticipated further direct investments into the local manufacture of telecommunications equipment, such as telephone boxes and telephone handsets. In November 2004 for example, the Chinese vendor ZTE announced plans to set up a factory in the federal capital, Abuja to manufacture telephone handsets and pre-paid recharge cards (NCC, 2005). Furthermore, other contributions of the telecommunications sector to the Nigerian economy include an increased range and improved quality of telecom services available to Nigerian citizens; additional revenue for the government through spectrum and numbering fees, import duties and value added tax networks.

### 3.9 CONCLUSION

This chapter has revealed that much of the business environment and infrastructure facilities used to support Nigeria's economic development programme are seriously defective. A combination of an unstable political climate, inconsistent and poorly implemented policy framework and a lack of infrastructural facilities has rendered Nigeria's business environment highly un conducive for any meaningful economic growth.

With the return of a democratic government, Nigeria has had a stable political climate over the last twelve years. As a result, government policies are now properly implemented. It is in this regard that this study seeks to investigate the effect of increased access to telephony as a consequence of the liberalisation of the telecommunications sector (which

is one of the policies that have been implemented by the democratic government) on the business performance of small businesses in Nigeria and their capacity to contribute to regional development.

In this chapter, the micro and small enterprise sector, as well as the telecommunications sector in Nigeria has been reviewed. The review of the micro and small enterprise sector, also termed as small businesses, showed that the sector was not performing as expected. It was highlighted that small businesses faced several constraints including the lack of infrastructural facilities such as poor power supply and poor access to telecommunications networks and these constraints have hindered the performance of the small businesses to enhance economic development. This led to the review of the telecommunications sector in Nigeria which is the main focus of the study.

While reviewing the Nigerian telecommunications sector, it was revealed that for almost five decades the country struggled to establish a viable telecommunications network. The successful implementation of the liberalisation of the telecommunications sector led by the democratic government in 1999 resulted in the growth of the sector as well as having a significant impact on the other sectors of the Nigerian economy.

This chapter has provided the underlying concepts for this study and the next chapter discusses these concepts of small business and telecommunications, the implications for business performance and regional development which will assist in the construction of the conceptual framework and develop the research hypothesis that motivates the empirical part of this study.

## CHAPTER 4

### TELECOMMUNICATIONS AND SMALL BUSINESS: IMPLICATIONS FOR BUSINESS PERFORMANCE AND REGIONAL DEVELOPMENT

#### 4.1 Introduction

In Chapter Three, the development of small businesses and the telecommunication sector in Nigeria was discussed. The aim was to provide a historical description of the development of small businesses, the reform process, as well as the regulatory structure of the telecommunications sector in Nigeria.

The purpose of this chapter is to explore the relevant literature linking the four key concepts of this study: entrepreneurship and small business development (the influence of using telephony in business processes to enhance business performance of small businesses); small business location; telecommunications (increased access and use of telephony) by small businesses; and regional development (growth outcomes of having increased access to and use of telephony by small businesses) in order to support the delineation of the conceptual framework of the study (Leshem and Trafford, 2007). This chapter links with the preceding chapter to outline a theoretical framework that guides the development of the key concepts that inform the nature of the relationship between increased access and use of telephony; small business location; enhanced business performance of small business and growth outcomes of use of telephony in small business.

The remaining part of this chapter reviews relevant literature on the key concepts of this study. This chapter is structured as follows: Section 4.2 discusses telecommunications and small business performance; Section 4.3 analyses earlier approaches on the study of the economic impact of telecommunications services; Section 4.4 provides a critical evaluation of the literature on telecommunications, small business performance and regional development literature and Section 4.5 offers a summary to the chapter.

## 4.2 Telecommunications and Small Business Performance

According to Madden and Savage (2000), "In an emerging global economy, the ability of the telecommunications sector to provide an internationally competitive network for transferring information has significant implications for trade and economic growth" (p. 895). The perception that the telecommunications infrastructure is a vital part of social overhead capital is not new, as its importance to economic growth of developing countries has been examined by several economists (Madden and Savage, 2000; Roller and Waverman, 2001; Waverman, Meschi and Fuss, 2005; Sridhar and Sridhar, 2008). Social overhead capital is considered as expenditures on education, health services, roads, airports, telecommunications and electricity. Telecommunications infrastructure differs considerably from other types of infrastructure. In particular, telecommunications infrastructure lowers the transaction costs of doing business. The direct benefits of telecommunications services are generated from improved marketing information as well as the lowering of transaction costs, while the indirect benefit of telecommunications services are generated based on the diffusion of accelerated information (Shaw, 2001).

A major source of growth for developing countries is through knowledge creation and transmission, thus investment in telecommunications infrastructure is a priority for many governments and international agencies (Briceno-Garmendia, Estache and Shafik, 2004). As telecommunications infrastructure develops, transaction costs reduce and firms in various sectors of the economy experience an increase in output. Therefore, an investment in telecommunications infrastructure and its services provide significant benefits to the economy of any country (Sridhar and Sridhar, 2006).

In terms of economic growth, telecommunications infrastructure is quite different from other infrastructures because of the existence of network externalities, which is a phenomenon that increases the value of service with a rise in the number of users. Based on this fact, the impact of

telecommunications infrastructure on economic development is more evident compared to other infrastructures (Sridhar and Sridhar, 2006).

Cronin et al. (1991) investigated the existence of the feedback process in which economic activity and growth stimulates demand for telecommunications services. It is clear that as the economy grows, more telecommunications facilities are needed to conduct the increased business transactions. Further research by Cronin et al (1993), investigated the relationship at the state and sub-state levels, and the study confirmed that telecommunications investment affects economic activity and that economic activity can also affect telecommunications investment. Investment in telecommunications infrastructure enhances economic growth and activity, which further stimulates an increase in telecommunications investment. Modern telecommunications infrastructure reduces the cost of acquiring information and improves the efficiency of product and factor markets (Madden and Savage, 2000).

#### 4.2.1 Access and Uses of Telecommunications

Telecommunications are tools for the conveyance of information and are critical to the developmental process of social and economic activities. Telecommunications consist of numerous networks and overcome distance barriers, which hinder regional development. According to Briceno-Garmendia, Estache and Shaik (2004), the key determinant of access to telecommunications services is affordability. They argued that the price and the quality of telecommunications services offered to consumers in relation to their ability to pay, is an indicator of increased access to telephone. Without affordability, increased access to telecommunications is of limited use to consumers.

Access to telecommunications provides information that is essential to many developmental activities such as agriculture, industry, shipping, education, health and social services. The Maitland Commission noted that "telecommunications is a missing link in much of the developing world" (Hudson, 2006, p. 310). Within the last decade, there has been an

increase in telecommunications investment, with gaps still existing between the developing and the developed world as well as urban and rural areas, in terms of accessibility to telecommunications. In high income industrialised countries there are about fifty telephone lines per hundred people, while in some developing countries there is an average of less than one telephone line per one hundred people. The gaps are even more pronounced within the urban and non-urban or rural areas where there are almost three times as many telephone lines per one hundred people in the largest city of lower middle income countries, than in their rural areas. These gaps are quite significant since approximately fifty percent of the population and as many as eighty percent of the population of developing countries live in rural areas (Hudson, 1995; Cohen, 2006; Kenny, 2007).

The presence of and the ability to use telecommunications within a networked environment, as well as access to fast telecommunications services are essential in determining the benefits of telecommunications infrastructure. This is supported by the study carried out by Cronin et al (1993); Dholakia and Harlam (1993) and Parker (1995) that investment in telecommunications increases with economic growth, while economic growth increases with telecommunications investment. Access to telecoms includes affordability as well as proximity. According to Hudson (1997), the lack of telephones cannot necessarily be attributed to a lack of demand or purchasing power. Moreover, Hudson (2006), stated that in many developing countries telephone lines are not universally accessible, while in developed countries telephone lines are universally accessible. This problem arises from a bottleneck in the provision of services rather than a lack of sufficient disposable income to afford a telephone or pay for telephone calls.

Telecommunications can be used for a wide range of applications including education, healthcare and social services, in small businesses, community development and other socio-economic activities. The importance of universal access to telecommunications services is dependent on the use of telecommunications services for socio-economic development. Access

to basic telecommunications can also be used in the case of an emergency situation where both children and illiterate adults can easily call the hospital or police for help. Thus, it is noted that in times of emergency, telecommunication is important in rural or less developed areas. In effect the social benefits usually precede economic benefits.

Telecommunications have enhanced volumes of inter-regional trade in capital services. Most banks and securities firms have widely used telephone networks to carry out their services. The electronic fund transfer system, which forms the nervous centre of the international financial economy, allows banks to transfer funds around the world while taking advantage of favourable exchange rates. For example, Citicorp erected a telecommunications network to enable it to trade \$200 billion daily on the foreign exchange market around the world. According to Insights (1993), this type of telecommunications network allows banks to transfers funds worth more than \$1.5 trillion daily across the world at astounding rates. Within the securities markets, telecommunications systems have facilitated the emergence of 24-hour trading which allows stock markets to be linked to each other through the computerised trading of stocks. This was evidenced when the New York stock market exchange moved to an automated 24-hour trading system to allow transactions to take place at any time of the day.

In addition, access to telecommunications can help with the issue of pricing, where consumers' from rural areas can use telecommunications and information services from urban areas to access the price of goods and services. Telecommunications' access has been shown to offer important benefits in overcoming the distance issues that hamper business activities within rural and remote areas. This is particularly important because previous research on travel/transport have revealed the benefits in time saved which can be converted into monetary value and the amount of energy saved (Hudson, 1992). In this regards, evidence from field interviews carried out in China, the South Pacific and Africa revealed that users of telecommunications services believed that the benefits derived from having access to a telephone primarily include

savings in time and effort (Hudson, 1995). In many parts of the developing world, women engage in agricultural work and access to telecommunications services and network help them to obtain necessary information from extension agents.

Furthermore, the use of a telecommunications network can contribute to employment and facilitate entrepreneurship. Emerging evidence has shown that access to telecommunications has a strong impact on growth, economic development and poverty reduction. In their study carried out in India among small entrepreneurs, Cecchini and Scott (2003) argued that telecommunications services can help small businesses gain access to information on customer and suppliers as well as allowing them to connect to markets. In effect, access to and the use of telecommunications, which is a valuable tool for conveying information, can improve the business performance of small business, thereby enhancing their ability to contribute to economic development.

#### 4.2.2 The Role of Information on Business Performance

The gathering and transmission of information have, over time, played a larger role in many economies (Salop, 1976; Dewitt and Jones, 2001). The level of information available to an economy therefore varies from one economy to another. An economy in which the aggregate demand of the needs of consumers can be easily supplied is assumed to be an economy that is accurately informed: 'perfect-information economy' (Brooks et al., 2002). An example of this type of economy is where farmers plant the exact number of flour seeds needed by bread bakers who know the precise amount of bread required by consumers. This type of economy rarely exists where complete information on demand and supply is accurately known by consumers, suppliers and investors. In an attempt to match the information on demand and supply, some producers and suppliers tend to acquire more information than their counterparts, giving rise to asymmetric information (Stiglitz, 1999). Thus, producers

and suppliers who have the most information gain a higher competitive advantage in the market.

In developing economies, price is important to participants (producers, suppliers and consumers) in the economy, as it transmits all the information that is required for effective decision making. Producers make efforts to acquire information on the price of inputs and of the outputs they intend to sell in order to make a decision on what and how to produce. Consumers also look for information regarding the prices of the goods and services they intend to buy, the current charge for their labour skills as well as other services they wish to sell, in order to be able to make appropriate decisions about household consumption and labour force participation. Based on this, producers and consumers from different locations are linked together in an information network through the prevailing market prices, which act as coordination indicators for both production and consumption sides (Eggleston, Jensen and Zeckhauser, 2002).

In most developing countries, the coordination of economic activity rarely works, due to inadequate sources of information as regards market prices and other production-related information. According to Geertz (1978, p. 30), "information is poor, scarce, unevenly distributed, inefficiently communicated, and intensely valued" in many developing countries. This can be attributed to the fact that many people experience a lack of telecommunication infrastructure. Instinctively, it appears that access and use of telephony, which acts as a medium for information flow, should play a significant role in reducing information asymmetries on markets among small businesses in developing countries, thereby enhancing business performance. According to the findings of a study carried out on the use of the telephones in South Africa, telecommunicated information has replaced physical transport. Waverman, Meschi and Fuss (2005) concluded that telecommunicated information reduced costs when determining buying and selling prices and those associated with transport as well as reducing time consuming physical contact.

The primary activity of most small businesses is the production of goods and services and the success of these businesses is dependent on the quality and quantity of information available to them. The quality and quantity of information received from both the supply and demand environments and how they are utilised for production processes is significant to the growth of the business (Porter, 2000). For instance, in order to achieve improved business performance, the strategic decision a small business takes is usually based on the available information the small business receives on rising costs, in conjunction with the information received on demand. Inadequate availability of information on suppliers, consumers and governmental policies may leave small business owners isolated with a tendency to make wrong business decisions.

Furthermore, it is imperative to note that the flow of information among market participants such as business owners and consumers is a two-way process. It is important for business owners to acquire information required for their business process, while also ensuring adequate information such as the launch of new products and the availability of products are being transmitted to the market place. In effect, the acquisition and transmission of information by businesses to the market place allows businesses to remain sustainable (Grace, Kenny and Qiang, 2004). In view of this, the telephone seems to be the cheapest and most appropriate communication channel as it allows a two-way information flow between business owners and consumers, and as such they play a fundamental role in determining the performance outcomes of small businesses as well as improving the service provision of the business (O'Dea, 1999).

In developing countries, small businesses need to send and receive information to most participants in their business environment such as suppliers, consumers, middlemen and even their competitors in order to ensure the efficient production of goods and services, and to reduce operational cost as well as increase sales. Thus, telephony would appear to be the easiest and most affordable means of communication to link all

the participants within the business environment in a developing economy (Donner, 2008).

One of the major reasons for business creation amongst most small businesses is to increase sales as well as maximise profit. In order to maximise profit, small businesses have to acquire the correct information for their production process. The acquisition of timely and accessible information by small businesses would ensure organisational effectiveness, reduce risk and positively influence the overall performance of the business (Lechner, Dowling and Welppe, 2006). According to Duncombe and Heeks (1999), small enterprises often ignore the fundamental role information plays with regards to improved business performance. This may be attributed to lack of education on the part of the business owners, inaccessible information sources as well as inadequate telecommunications infrastructure such as telephony services (Huotari and Wilson, 2001).

The rapid evolution of the use of telephony within small businesses in developing countries offers a unique opportunity to study the impact of increased access to telephony on business performance. This study postulates that this rapid evolution of telephony has facilitated increased access to information required by the small businesses for their business process and the wider business environment, thereby enhancing their business performance. In addition, easy and affordable access to telephony in developing countries would allow timely information flow and create the appropriate linkage between supply, production, demand and distribution channels within the business environment. This timely access to telephony services would enhance competitive advantage and improve business performance, thereby enhancing their capacity to contribute to the regional development of their business location.

#### 4.3 Earlier Approaches on the study of the Economic Impact of Telecommunications services on development

The early history of telecommunications can be traced to the invention of the telegraph in 1838, with the first long-distance telegraph message sent in 1844. The telegraph and the trans-Atlantic cable was acknowledged and supported by statistical evidence, to have an impact on business through the rapid and significant narrowing of inter-market differentials and a reduction in transaction and information costs that created efficient market places across the world (Garbade and Silber, 1978).

Telecommunication infrastructure is quite different from most other types of infrastructure because of its network externalities, which is a phenomenon that increases the value of a service with an increase in the number of users (Albani, Winniewisser and Turowski, 2004). That was demonstrated for example, in the study carried out by Kim et al (1997) in the analysis of an online service competition in Korea (Sridhar and Sridhar, 2008). There are quite a number of empirical studies which have examined the economic impact of telecommunications on development. The economic impact of telecommunications on growth was documented by Hardy (1980), with empirical evidence based on data from forty-five countries. The effect of telecommunication investment on GDP was found to be higher in least developed countries than developed economies.

This shows that the recent evolution of telephones in developing countries has had a significant impact on development. In support of this, Leff (1984), carried out a study on the effect of investment in telecommunication (primarily telephone) facilities in developing countries and found that with increased telecom services, firms experience more physically dispersed activities, while also enjoying economies of scale and scope. In addition, Bates (1999) found that more than half of the telephone calls made were for economic purposes, for instance: discussions about employment opportunities, land transactions, fund transfers, commodity prices and other business affairs. They also discovered that the price of agricultural products were higher in villages with access to telephones than in villages with no telephone access.

Most of the studies carried out on the economic impact of telecommunications services on development are conducted at the country level and usually take the form of aggregate correlation analysis, structural economic analysis and information sector. The aggregate correlation analysis refers to the approach wherein telecommunications are viewed as a factor of production. Studies carried out using this approach, use either statistical correlation and regression analysis to identify supposedly causal macro-economic relationships, in which the use of telecommunications services (teledensity) is taken as one of the parameters for the model (Saunders et al., 1983). The structural economic analysis refers to the approach which relies on input-output analysis and focuses on the structure of the economy based on the level of activity in different sectors such as agriculture, manufacturing, services and all other sectors in the economy (Saunders et al., 1983). Studies that used this approach to examine the impact of telecommunications consider how much of the telecommunications sector's output is sold as an intermediate product that contributes to the production of goods and services in the various sectors of the economy and what proportion of output is sold to final consumers. The information sector analysis refers to the approach wherein the impact of telecommunications on the economy is identified through the extent of productive activities that involve information handling and coordination and monitoring processes (Saunders et al., 1983). Thus, the economic impact of telecommunications has been viewed using different approaches from a macro-economic view, however, this study analyses the impact of telecommunications from a micro-level.

The available literature on telecommunications growth provides evidence on the relationship between the demand for telecommunication services and economic growth. It is assumed that increases in purchasing power resulting from the increased use of telecommunications services, further increases the demand for telecommunications. The reverse causality has been investigated by Chatterjee, Thachenkary and Katz, (1998). They pointed out that disposable income levels are determined by income patterns i.e. the purchasing power of telecommunications services, and in turn the growth of services. This reverse causality has also been

investigated by Cronin et al. (1991) and Cronin et al (1993). Cronin et al (1991) used the Granger, Sims and modified Sims test to verify the existence of the feedback process in which economic activity and development stimulate demands for telecommunication services. As the economy of any country grows, increased telecommunication facilities are required for increased business transactions that take place. This relationship was further confirmed by Cronin et al. (1993) when they investigated the link at state and sub-state levels in the United States. It was found that telecommunications investment has an effect on economic activity and that economic activity can in turn influence telecommunications investment.

Furthermore, emerging evidence from Sridar and Sridar (2004) using the Roeller Waverman framework revealed the impact of the telephone on the growth of developing countries. It was observed that in many developing countries, growth is minimal due to problems such as low skill levels, poor governance and lack of capital. As a result, it becomes complex to show how telephony might increase growth rate in a country where economic growth is low. In addition, the evolution of the telecommunications penetration rate is still new in developing countries. Many started the process just over a decade ago, as such there is little real trend available for analysis.

Sridhar and Sridhar (2004) used the Roeller Waverman framework to conduct a study in 28 developing countries over a twelve year period between 1990 and 2001. They found that a one percent increase in telephone penetration increases growth by 6.75 percent. Waverman, Meschi and Fuss (2005), in their study on the impact of mobile telephony in developed and developing countries, found that mobile telephony has a positive and significant impact on economic growth, with the impact twice as large in developing countries compared to developed countries.

In addition, there are a few publications and some empirical studies showing the significant benefits of telephone for business growth. Eggleston et al (2002) illustrated how the basic telecommunication infrastructure- telephone, can create 'a digital provide' by making markets

more efficient through the distribution of information to isolated local residents, as well as improving the living standard of the poor people. This is supported by Jagun, Heeks and Whalley (2008), in their study on the impact of mobile phones on developing country micro-enterprises, in which they found that mobile phones reduced information failures as well as their related costs and risks. They also noted that mobile phones help to make trade and markets work more efficiently and effectively, which in turn contributes to the growth of the developing economy.

In reviewing the relevant literature on the economic impact of telecommunications services, with particular emphasis on telephony, it can be proposed that increased access and use of telephony can encourage business activity, which in turn will contribute to regional development. This study focuses on the significant role played by telephony and presumes that a relationship exists between the incorporation of the basic form of telecommunications accessible to small businesses –telephony and business performance. This study investigates how increased access and use of telephony impact the business performance of small businesses in a specific developing economy as a consequence of the recent liberalisation of the telecommunications sector which has prompted an increase in the use of the telephony infrastructure. It is anticipated that this study will provide insights into the nature and strength of the presumed relationship.

#### 4.4 Critical evaluation of the literature on Telecommunications, Small Business Performance and Regional Development

This section presents the synthesis of the entire literature presented in this and preceding chapters (Chapter 2 and Chapter 3). The rationale behind this section is to motivate the research questions as well as to provide the basis for the conceptual framework and the hypothesis development for this study.

#### 4.4.1 Entrepreneurship and Small Business Literature

Research on the relationship between small business and entrepreneurship, in addition to the differences that exist between them, have been carried out by a number of researchers, for example Burns (2001); Beaver (2002); Grant (2002); Hisrich and Drnovsek (2002); Bridge, O'Neil and Cromie (2003); Thurik and Wennekers (2004) and Landstrom (2009).

Emerging evidence revealed that entrepreneurship and small business are related but not synonymous (Thurik and Wennekers, 2004; Acs and Virgill, 2009). While entrepreneurship has been seen as a behavioural trait of entrepreneurs who concentrate on opportunities, small businesses have been viewed as a vehicle that entrepreneurs use to introduce new products and strategies that change the industry, as well as for people who run and own their business for their livelihood (Thurik and Wennekers, 2004). As stated in Chapter 2 (pg. 21), entrepreneurship is a process which can take place in both small and large businesses. According to Shane and Eckhardt (2005, p. 333), entrepreneurship is a field which involves "the study of sources of opportunities, the processes of discovery, evaluation and exploitation of opportunities; and the set of individuals who discover, evaluate and exploit these opportunities". In effect entrepreneurship involves the process of generating something new or different which has value, by devoting all necessary resources, including time, in order to achieve a reward either in terms of monetary value or personal satisfaction. Thus, the theories of entrepreneurship are construed from economic, sociological and psychological perspectives. From an economic perspective, the theory of economic development was conceived because the small business has been viewed as the vehicle of entrepreneurship and employment creation (Thurik and Wennekers, 2004)

The entrepreneur is the person responsible for the process of creating something new with a value (an innovation and/or a new organization)—in other words, the entrepreneur is a significant person in new value creation. Entrepreneurs are characteristically risk takers who have a vision that their need for achievement, power and control over their life and

enterprise can be best achieved under their direction and control. The entrepreneur is the individual that identifies opportunities and exploits them. Opportunities arise for various reasons within an environment, as it is left for the entrepreneur to take a decision to identify and exploit the opportunity as they arise. The decision of an owner-manager to identify and exploit an opportunity is usually motivated by different reasons.

In view of the above, this study takes the view that the decision of an entrepreneur of a small business to identify and exploit an opportunity is usually motivated by different reasons, despite the risk involved in starting the business as well as the other problems the environment or location of the business might present. A proper understanding of the motivations of small business entrepreneurs to create a business is important, not to just shed light on how they contribute to the development of their locality, but also to reveal the factors that can enhance small business creation, survival and growth.

In addition, researchers have been analysing the entrepreneurial process such as innovative activities and strategies as a contributing factor to economic development. For example, researchers like Holcombe (1998), Carree and Thurik (2005), Baumol and Strom (2007), Moufawad (2012), conducted studies that are designed to show the impact of innovative activities on economic growth and development in an economy. However, the literature that examines the impact of innovative activities on small business growth in developing countries is not fully extensive. Innovativeness is defined as a concept of openness to new ideas. In small businesses, innovativeness involves the motivation of the owner of the business to learn about and to adopt innovations, both in the input and output market (Verhees and Meulenber, 2004). According to Freel and Robson (2004) in their study on small firm innovation, growth and performance, there is a positive relationship between product innovation and growing sales and productivity. In addition, the degree of innovation in terms of new products and services was found to be strongly correlated to competition and small business performance (Georgellis, Joyce and Woods, 2005).

While the two studies of Freel and Robson (2004) and Georgellis, Joyce and Woods (2005) have helped in clarifying the impact of innovative activities on small business growth, their studies focused on developed countries. The gap in the literature in developing countries can hinder the development of small business creation as well as impede the efficiency of small business activities in developing countries, as the environmental situation in developed economies is quite different from the economic situation in developing economies as stated earlier in this chapter. Thus, it is essential to investigate the effect of innovative activities on small business growth.

#### 4.4.2 The role of Networks on Small Business development

Researchers who have carried out studies on the relationship between entrepreneurship and small businesses have recognised the role of networks in understanding entrepreneurs and small businesses (Carter and Jones-Evan, 2000; O'Donnell, Gilmore and Cummins, 2001; Anderson, Jack and Dodd, 2005). Entrepreneurs are viewed as individuals with a high drive for individuality and autonomy (Morris and Schindehutte, 2005). However, entrepreneurs are very dependent on ties and trust, despite their autonomic characteristics. Thus, it has been recognised that networks and networking are essential entrepreneurial tools that contribute to the creation, development and growth of small businesses. For example, it was found that networks assist small businesses to acquire information and advice (Shaw and Conway, 2000; Hoang and Antoncic, 2003). In addition, it has also been found that networks make significant contributions to the innovative activities of small businesses (Lipparini, and Sobrero, 1994; Roper, 1997; Tsai, 2001; Freel, 2003; Hoang and Antoncic, 2003).

While small business networking research has concentrated on small business creation and growth for example, Szarka (1990), Donckerls and Lambrecht (1995), Bruderl and Preisendofer (1998), Street and Cameron (2007), a few studies also exist on the process of interactions involved

between small businesses and networks and how they facilitate business start-up and development. However, while most researches in small business networking have selected the owner-manager as a unit (Shaw and Conway, 2000), it is essential to explore the important role played by networks in the process of small business start-up, growth and development, while selecting the small business as a unit of analysis. This study contributes to emerging small business networking literature on developing countries and has selected the small business as a unit of analysis.

#### 4.4.3 The impact of Telecommunications on Small Business performance

Telecommunications, which is an integral part of information and communication technology (ICT), is an information handling technology. Within the context of small businesses, telecommunications with particular focus on the telephone is the most used and most easily accessible to small businesses (Heeks, 1999; Duncombe and Heeks, 2002; Duncombe, 2010). According to Duncombe and Heeks (1999) "telephones are the information-related technology that has done the most to reduce cost, increase income and reduce uncertainty and risk. Telephones support the current reality of informal information systems they can help extend social and business networks, and they clearly substitute for journeys and in some cases, for brokers, traders and other business intermediaries" (Donner and Escobar, 2010, p. 642). Thus, the telephone functions as a mediated communication technology in carrying out the basic task of running a business such as reducing costs, increasing sales as well as managing risks. In addition, it is also an alternative for making a trip. In effect, the use of the telephones assists businesses to increase their productivity and competitiveness in terms of business performance (Saunders et al., 1994, Raschid and Elder, 2009).

Evidence suggests that small businesses are growth-oriented, although on average, significantly less than larger businesses (Donner and Escobar, 2010). In order for small businesses to increase productivity as well as

achieve growth, they require information to efficiently carry out their business processes.

Figure 4.1 shows the different information requirements of small businesses and how they use the information to achieve growth.

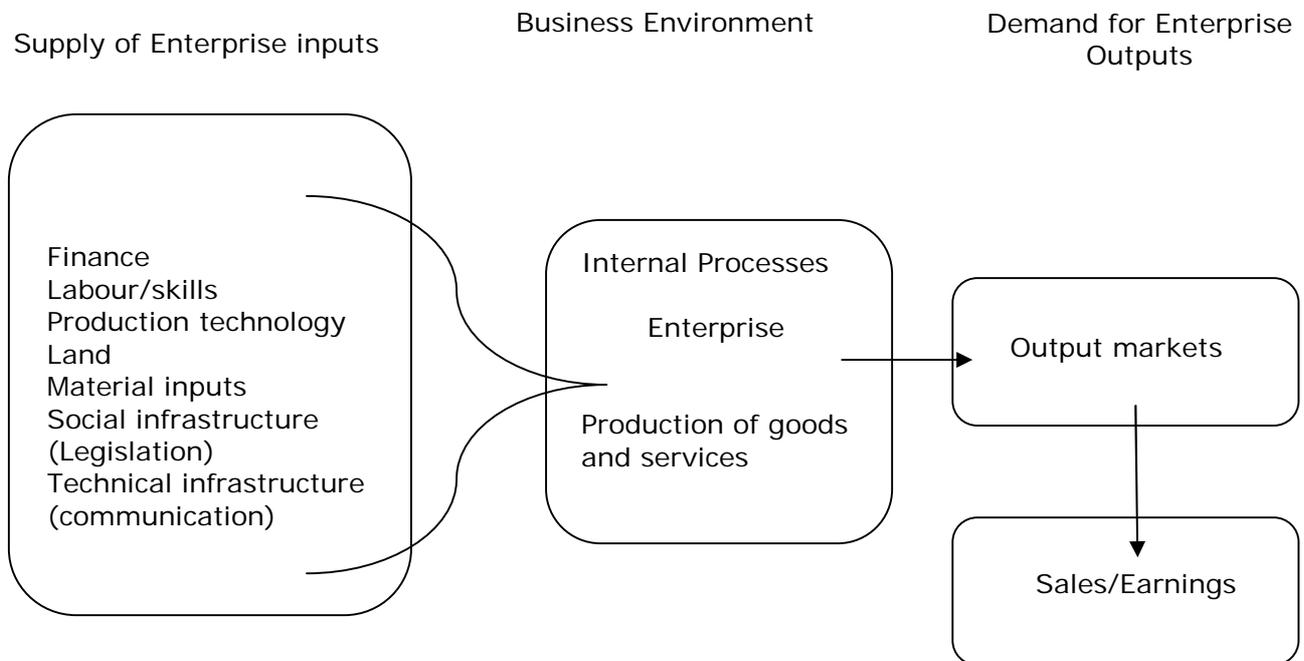


Figure 4.1- Information needs of Small Businesses  
Source: Donner and Escobar, 2010

As shown in Figure 4.1, small businesses require information on supply of inputs (where to get materials for their business); demand for outputs (information on new customers for their goods and services); finance (information how to source for finance for the business); skills (information on how to acquire more and better skills for the business) and environment (information on government regulations). As such entrepreneurs of small businesses require an economic resource, such as the telephone, to access the information required by the business.

Emerging evidence reveals that the information and communication technology for development literature seeks to understand how diverse technologies, including the telephone, can be used advantageously by small businesses (Sauders et al., 1994; Duncombe and Heeks, 2002). Recent studies have shown how small businesses in developing countries are using telephones rather than other ICTs. However, the literature on

telephone use in developing world is a tiny fraction of the total literature (Donner, 2008). Research carried out on the use of the telephone by small businesses in developing countries have emerged from different disciplines, have used distinct methodologies and have varied conclusions.

One example is the study carried out by Jensen (2007) on Kerala fishermen. It was found that “the adoption of mobile phones by fishermen and wholesalers was associated with a dramatic reduction in price dispersion, the complete elimination of waste, and near-perfect adherence to the Law of One price. Both consumer and producer welfare increased” (Jensen, 2007, p. 892). Thus, for small businesses to use the telephone for their benefit, easy access is very important.

Another study carried out by Jagun, Heeks and Whalley (2008) on the role of the mobile phone in mediating supply chains in Nigeria, provided a multidisciplinary approach to the study of the use of the telephones by small businesses. They found that mobile phones offer weavers increased access to credit by allowing traders to call fabric vendors on their behalf, and give their word on the trustworthiness of the weaver’s order. This encourages the fabric vendors to pay the asking price of the fabric before the weaver’s work is completed. In effect, the use of the telephones by small businesses supports the supply chain process of the business.

Many research works carried out on the use of the telephone by small business are qualitative (Donner and Escobar, 2010). Thus, these studies do not report statistical findings. Therefore, it is important to carry out a quantitative study on the use of the telephone by small businesses. This thesis takes the view that increased access to and use of the telephone would be beneficial for small businesses and thus, there is a need to determine how increased access to and use of telephony by small businesses enhances their business performance. A proper understanding of how the use of telephony enhances small business performance would help contribute to the emerging literature of the use of the telephone in developing countries.

#### 4.4.4 The impact of Telecommunications and Small Business on Regional development

In recent years there has been rapid growth in the penetration of telephone (mobile and landline) in developing countries. It has been established that telephony is significant to development, although very little systematic evidence is available on the developmental impact of telecommunications (telephony) (Rashid and Elder, 2009). At present, the predominant form of communication in developing countries is by telephone. However, developing countries experience a low telecoms trap (Waverman, Meschi and Fuss, 2005). The lack of networks and access to telecommunications in many regions of developing countries increases costs and reduces opportunities because information gathering is difficult.

One of the most important sources of growth for developing countries is information creation and transmission. Thus, investment in telecommunications infrastructure is a priority for many governments and international agencies. As telecommunications infrastructure develops, transaction costs reduce and firms in various sectors of the economy experience an increase in output. Therefore, investment in telecommunications infrastructure and its services provide significant benefits to the economy of any country (Sridhar and Sridhar, 2006).

As stated earlier, emerging evidence from recent empirical studies, such as Waverman, Meschi and Fuss (2005), Sridar and Sridar (2008) on the effect of telecommunications (telephone) on growth in developing countries, revealed that in many developing countries, growth has been insignificant due to various issues such as poor governance, lack of capital and low skill levels. This has made it difficult to show that telephony has had an impact on development where growth is low. In addition, the advance in telecommunications penetration is still new in developing countries, thus there is little real trend available for analysis.

The contribution of small business to regional development, as stated earlier in Chapter two, is dependent on the development of the country. As an economy develops with improvements in wealth and infrastructure, the impact of small business activities increases, which in turn is reflected

in regional development (Acs, 2006; Acs, Desai and Hessels, 2008). Small businesses contribute to regional development by carrying out new combinations through the creation of new businesses. According to the study carried out by Van Stel and Storey (2004), new businesses directly create jobs, thereby contributing to the accumulation of regional jobs. Thus, the impact of small business on regional development is through job creation.

This study takes the view that the increased penetration of telecommunications in developing countries can contribute to regional development, since one of the most important sources of growth for developing countries is through information creation and transmission and small businesses require information to carry out their business activities in order to achieve growth and in turn contribute to regional development. Given the limited research into the use of telephony by small businesses in developing countries, it is important to investigate the effect the use of telecommunications (telephone) – as an information handling technology by small businesses has on regional development.

As stated earlier in this chapter, this thesis aims to fill the gap in literature on the study of telecommunications and small businesses from a developing country context.

#### 4.4.5 The Role of Mobile Technology in Business Development in Sub-Saharan Africa

The liberalisation of the telecommunications market and new technological solutions, particularly, mobile telephony has enhanced the possibilities of long-distance communication in Africa (Overa, 2006). This development is strong evidence for the power of the user in the technology-adoption process. The adoption of mobile telephony by developing economies has exceeded all expectations, and has resulted in significant investments in infrastructure, marketing, and R&D to serve the startling demand. According to ITU (2008), Africa registered some of the highest adoption rates of mobile telephony with 50% annual growth rate between 2001 and 2006. Although, the adoption rate is staggering in sub-Saharan Africa as

the primary use relates to facilitating access to and use of information with strong evidence indicating that the mobile telephony use has an economic impact on market and individuals (Aker and Mbiti, 2010). In line with this, the perceived benefits of telecommunications use in Sub-Saharan Africa tend to be more inclined towards economic development, particularly, poverty reduction, improved productivity and social equity (Sey, 2011). As such, with improved information and communication technologies emerging from developed countries, the contributory role of telecommunications to economic development in developing countries such as sub-Sahara Africa cannot be underestimated through businesses. According to Donner (2006), the benefit of mobile telephony use in developing economies, such as Rwanda enhances businesses to frequently contact friends, family and existing business networks in order to facilitate contacts new networks. Thus, the perception and use of mobile telephony by these users suggests that the role of telecommunications in livelihood is to facilitate connectivity (Sey, 2011).

In sub-Sahara Africa, the use of mobile telephony helps reduce information asymmetries, as it enables access to market opportunities. Myhr and Nordstrom (2006) in a study carried out on 'livelihood changes enabled by mobile phones' demonstrated that fishermen in Tanzania through the use of mobile phones they had increased access to information which resulted in empowering them through increased bargaining power. Another interesting contributory role of telecommunications has been linked to the use of mobile telephony in reducing transportation cost in sub-Sahara Africa. Transportation costs include the price of moving goods from producers to consumers, as well as the cost of transporting people in order to exchange information. Thus, transportation costs are basically linked to transaction costs, and this arises because information is expensive and asymmetrically held by the parties involved in information exchange (Overa, 2006). Thus, the use of telecommunications particularly mobile telephony is seen as an enabling technological tool that makes exchange of information and networking among businesses more efficient, especially when they are spatially dispersed. Overa (2006) in a study carried out on the impact of the

phenomenal growth in access to mobile phones on informal traders' business practices in Ghana, demonstrated that traders in Ghana reduce transportation costs in particular information asymmetries, through adaptation and use of telecommunication technology.

Thus, this study which is carried out in Nigeria, a sub-Sahara African country takes the view that the increased access and use of telecommunications particularly telephony can contribute to the development of small businesses, given that the use of telecommunications by businesses has a significant influence on their entrepreneurial processes.

#### 4.5 Conclusion

In this chapter, relevant literatures were reviewed to show the relationship between the four key concepts of this study: entrepreneurship and small businesses (the impact of using telephony in the business processes to enhance business performance of small businesses), small business location, telecommunications (increased access and use of telephony) by small business, and regional development (the growth outcomes of increased access and the use of telephony by small business). This chapter provided background information on the economic impact of telecommunications services on small businesses and its resulting effect on regional development. The gaps identified in reviewing the literature in this and the preceding chapters facilitated the development of the research questions and hypotheses of this research in Chapter Five, in which the outcomes are expected to contribute and further strengthen the findings of the existing literature. The next chapter provides the conceptual framework based on the literature reviewed in Chapters Two, Three and Four from which the research questions and hypothesis are developed.

## CHAPTER 5

### CONCEPTUAL FRAMEWORK

#### 5.1 Introduction

In Chapter Four, relevant literatures underpinning the study were reviewed. In particular, telecommunications (telephony) were depicted as the timely and cheap communication medium required by owner-managers of small businesses to help them gather information necessary in order to stimulate the production, supply and distribution of goods and services that could enhance the business performance, as well as contribute to regional development. The purpose of this chapter is to link the different viewpoints of the literature reviewed in the last three chapters with the aim of developing a conceptual framework. A conceptual framework “is simply a less developed form of a theory, and consists of statements that link abstract concepts to empirical data (Leshem and Trafford, 2007). According to Rudestam and Newton (2007, p. 112), “theories and conceptual frameworks are developed to account for or describe abstract phenomena that occur under similar conditions”. The conceptual framework for this study is to provide a clear and explicit connection between the theories, previous findings, research design, rationale of the present study, interpretation of the research findings and conceptual conclusion (Leshem and Trafford, 2007). The conceptual framework was developed to provide a theoretical explanation of the research aim and objectives as well as to provide information on how the objectives of the study would be achieved.

This chapter is structured as follows: Section 5.2 discusses the development of the conceptual model; Section 5.3 presents the research model and states the research hypotheses; and Section 5.4 provides a summary to the chapter.

## 5.2 Developing the Conceptual Framework

This section will outline the construction of the conceptual framework of telecommunications (telephony), small business performance and regional development based on, business location, infrastructural problems encountered by small businesses, increased access and uses of telephone by small businesses, the influence of using telephony in business processes, enhanced business performance and growth outcomes of having increased access to and use of telephony by small businesses.

The proposed conceptual framework was developed and supported by the findings of the Global Entrepreneurship Monitor (GEM) that the locations within which small businesses operate are significant determinants of the resulting outcomes of small business growth. According to the report produced by GEM (2008), the locations in which small businesses operate provide entrepreneurial conditions, such that if all the necessary conditions are available in appropriate quantities, entrepreneurial opportunities should arise (Bosma, 2008). Thus, owner-managers of small businesses identify and exploit these opportunities as they arise and apply relevant entrepreneurial skills to generate entrepreneurial activities and business growth outcomes.

Prior studies carried out by entrepreneurship scholars on entrepreneurship and small business, have developed and used different approaches for example, stochastic; descriptive; evolutionary; resource-based; learning; and deterministic approaches (Dobbs and Hamilton, 2007), to assess small business performance and growth outcomes. These different approaches to entrepreneurship and small business studies have presented varying perspectives of entrepreneurship, derived from several combinations of individual, business and environmental factors (Lumpkin and Dess, 1996). Thus, there is no general agreement on the approach to the study of entrepreneurship and its relationship to business performance. However, this study uses an approach which presents a valuable model for assessing new and established small businesses' performance and growth outcomes, using a combination of environmental and technological factors. In order to conduct this study, a conceptual

framework is developed based on the existing literature reviewed. The proposed conceptual framework is presented in Figure 5.1 below.

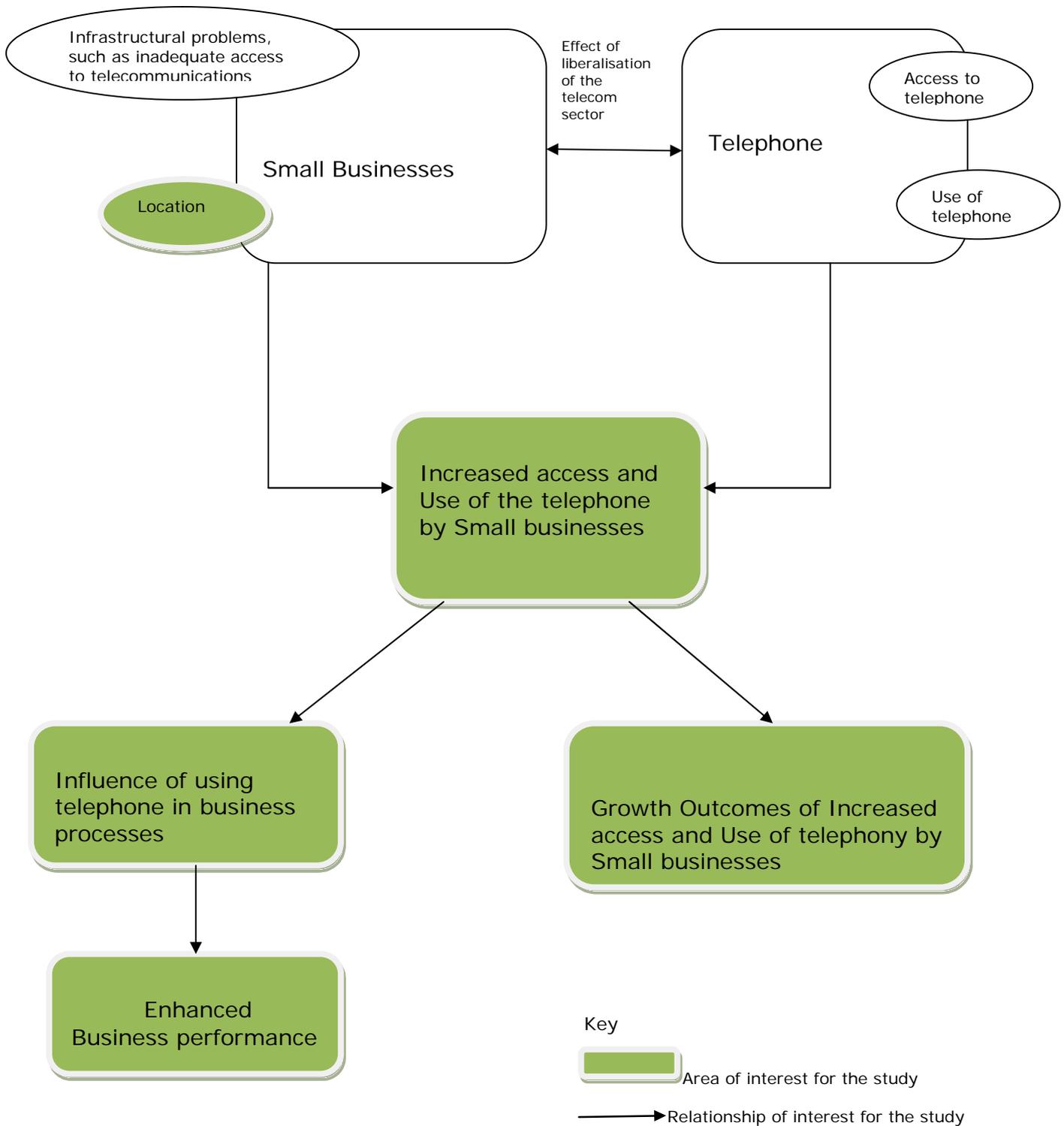


Figure 5.1: Proposed conceptual framework for the study

As shown in figure 5.1, the proposed conceptual framework describes the relationship between the key concepts that this study seeks to investigate, which are represented in green shades. The idea behind the proposed framework is that the location in which the small businesses operate, in relation to the infrastructural problems encountered by small businesses and this, combined with increased access and use of telephony in business processes predicts enhanced business performance and business growth outcomes which consequently enhance regional development of the business location.

Increased access to telecommunication services and the influence of using telephony in business processes involves information exchange between small businesses, customers and suppliers; including larger businesses. The output generated from this information exchange defines the business performance and generates growth outcomes for small business, which in turn feeds back into the business locations.

The green shaded areas of the conceptual framework are comprised of the major elements which represent the idea of this study. Thus, the elements of the green shaded areas have been transformed into researchable constructs and crafted into a research model in which all the elements and their relationships would be investigated and tested for significance.

### 5.3 Development of the Research Hypotheses

This section presents the research model and states the research hypotheses. This study primarily focussed on the changing role of telecommunications for small businesses in a specific developing country. It investigates whether a relationship existed between telecommunications, small business performance and regional development of the business location. In order to identify this gap, the proposed conceptual framework (Figure 5.1) is transformed into a research model with measurable constructs to help develop the research hypothesis. The research model is presented in Figure 5.2 below.

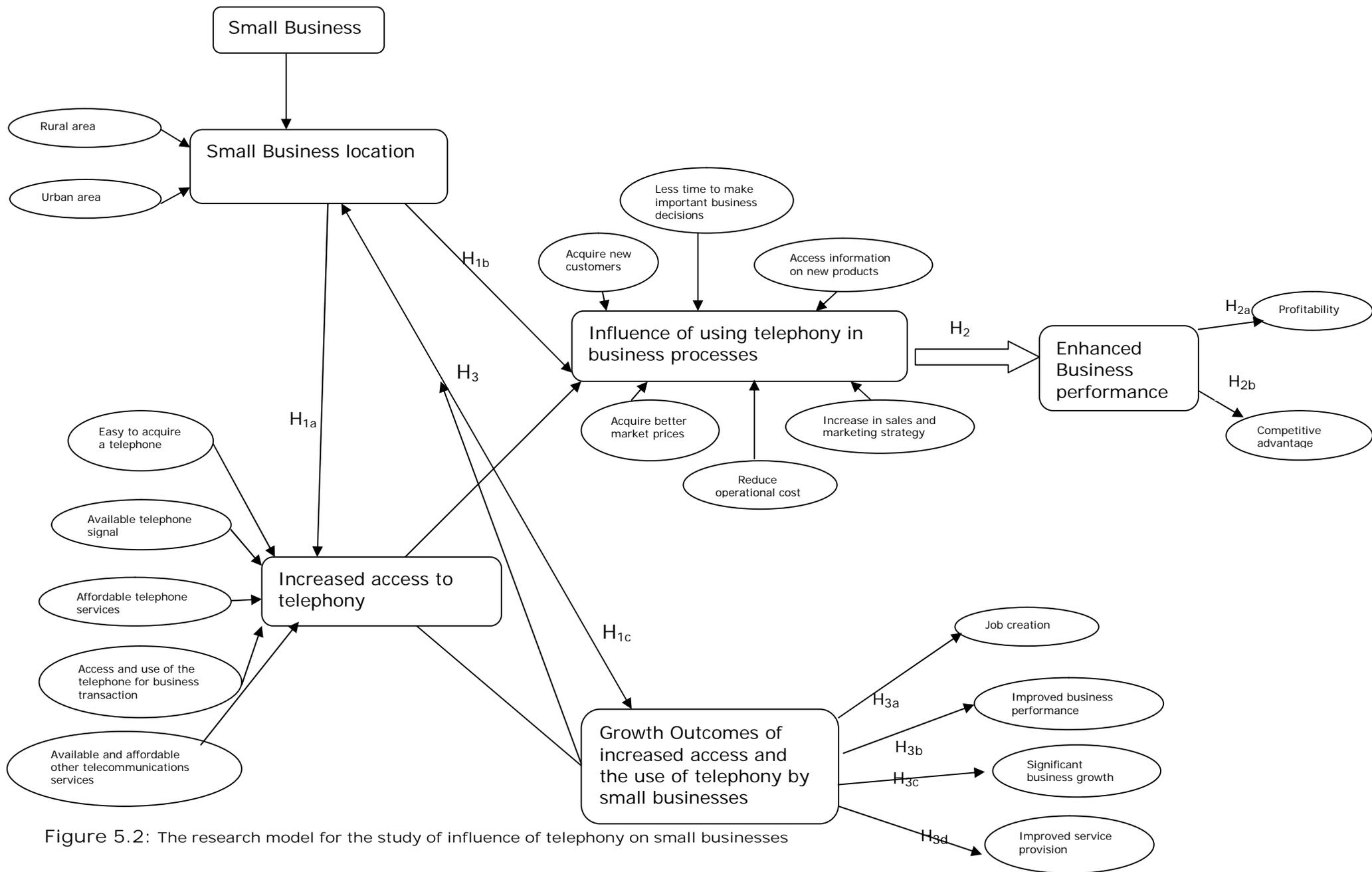


Figure 5.2: The research model for the study of influence of telephony on small businesses

The research model, as shown in Figure 5.2, like some GEM models, is made up of two components: the measurement model which describes the links between the research constructs and their indicators; and the relationship model which describes the links and connections, or relationships between the research constructs. The relationship model is constructed using five hypothesised constructs, small business location; increased access to telephony; influence of using telephony in business processes; enhanced business performance and growth outcomes of having increased access to and use of telephony by small businesses.

This research model used different theories and as used by Krueger (2005), in order to connect and explain how the use of telephony enhances small business performance and contributes to regional development. The theories used in connecting and explaining the research model include, the theory of entrepreneurship, the theory of business growth and the theory of economic growth, which were discussed at length in Chapter two. According to Leshem and Trafford (2007), theories are integral to research and its significance is central to the research process as the researcher uses it as a tool to make meaning of the research in order to achieve specific objectives. Thus, the theories used in this study are used as meaning making tools in order to design the study.

Although the research model is expected to provide an in-depth understanding of the impact of increased access to telephony on small business performance and regional development, it is acknowledged that the model is incomplete, which is one of the characteristics of models in the social sciences, because it is impossible to represent the full complexity of the world in a single model (Lave, 1993).

### 5.3.1 Elements in the Research Model

#### Small Business

The small business is a business venture. The owner-manager represents the business and develops and implements business decisions that drive the business.

The competitive behaviour of the small business owner-manager, combined with the entrepreneurial activities in which the business engages, enables the owner-manager to efficiently coordinate resources such as information, finance and telephony services to generate enhanced business performance in the form of competitive advantage and profits. As shown in Figure 5.1, the small businesses are faced with infrastructural problems such as access to telephony which can hinder the development of the business. In most developing countries such as, the provision of infrastructure is the responsibility of the government and this can be attributed to the characteristics of infrastructure investment, wherein infrastructure supply is characterized by high set-up cost. However, the nearly exclusive concentration of infrastructure provision in the hands of the public sector, especially in developing countries including Nigeria, has led to failures in the supply of these services (Adenikinju, 2005). Thus, majority of the populace including small businesses in developing countries such as Nigeria face problems in relation to access to infrastructural facilities. (Agboli and Ukaegbu, 2006)

#### Small Business Location

The entrepreneurial process depends on the business environment which can either encourage or discourage the entrepreneurial process. As shown in the research model, the small business operates in a business location which is a reflection of the business environment. A country with political and economic stability and favourable economic policies that support small business development will encourage the entrepreneurial process of small businesses. Thus, the small business operates in a location with easy access to resources such as finance, good roads, power supply,

telecommunications, training and other resources that support small business development.

A number of studies (Wennekers and Thurik, 1999; Curran, 2000; Acs, 2007) have analysed economic policies and small business growth and have shown that favourable economic policies are important for small business growth. In particular, emerging evidence from Briceno-Garmendia, Estache, and Shaik (2004) and Prahalad and Hammond (2002), reveals that the productivity of small businesses declined in countries or regions with poor infrastructural facilities. Thus, for small businesses to survive and significantly contribute to economic growth, favourable policies that support small business development must be provided by government and non-governmental organisations (NGOs).

In Subsection 3.2.1 of Chapter Three, certain problems of micro and small enterprises in Nigeria were stated, such as poor marketing strategies, lack of planning, lack of capital, lack of technical know-how, poor access to credit facilities due to corrupt practices, poor power supply, access to good road network, poor water supply and poor access to telecommunication network. It was noted that the business performance of the MSEs has been greatly hindered by poor power supply and poor access to telecommunications networks (Fatai, 2002). Based on the findings of the study undertaken by Fatai, (2002), that poor access to telecommunications hinders small business performance in Nigeria and the empirical findings of Global Entrepreneurship Monitor research (2005), that the business location influences the perception of entrepreneurial opportunities, (that is businesses in urban areas are more likely to perceive opportunities than businesses in rural areas); this study as shown in the research model, assumes that small businesses operate in different locations (urban and rural). Therefore, it is hypothesised that as a consequence of the recent liberalisation of the telecommunications sector, the extent of increased access to telephony available to small businesses, as well as the influence of using telephony in business processes and growth outcomes of having increased access to and use of

telephony by small businesses, varies across different locations in which the small business operate in Nigeria.

### Increased Access to Telephony

Increased access to telephony is used as an element in this study, given the effect of the liberalisation of the telecommunications sector in Nigeria. Before the liberalisation of the telecommunications sector in Nigeria, a few privileged people had access to telephone, but after the liberalisation of the telecommunications sector access to telephony was extended to everyone, including small businesses in urban and rural areas in Nigeria (Adeyinka, 2001; Adomi, 2005). Telecommunications liberalization is a complex and relatively new process for developing countries as such access to telecommunications varies between regions in developing countries. Recent evidence also suggests that regional inequality within many developing countries has increased in recent years (Naude et.al., 2008).

Although, the effect of the liberalisation of the telecommunications has increased access in Nigeria, this study assumes that the access to telephony is not equal across the regions in Nigeria and it is measured by the following: the ease of acquiring a telephone, availability of telephone signal, affordable telephony services, access and use for business transactions and other available and affordable telecommunications services such as fax and internet. These indicators used to measure increased access to telephony in this study were adapted and supported by the literature reviewed in Chapter Four, such as Briceno-Garmendia, Estache, and Shaik (2004).

## Influence of using Telephony in Business Processes

This refers to the extent to which business information is exchanged by small business owner-managers through the use of telephony. This element is used to assess the degree to which small business owner-managers use telephony in carrying out business processes. In this regard, this study takes the view that According to Duncombe and Heeks (1999), using telephony in business processes would facilitate the acquisition of new customers for the business, reduce the time it takes to make important business decisions, allow access to information on new products, acquire better market prices, reduce risk, reduce operational cost and increase sales and marketing strategy. The influence of using telephony is expected to increase the amount of information available to the owner-manager of the small business, which in turn will aid the owner-manager of the small business to efficiently coordinate and control the business. As stated in Chapter Four, the telephone is an information handling technology on which businesses largely relies on for information needed for business transactions, such as the buying and selling of goods and services, as well as availability of business-related information on supply and demand. Thus, it is hypothesised in this study that the use of telephony would increase the level of business activities and processes of small businesses in Nigeria, which in turn would enhance their business performance in Nigeria.

## Enhanced Business Performance

This element comprises of competitive advantage and profitability. Different studies have used diverse variables in measuring business performance. For example, the returns on investment, employment, profit, sales, equity, assets and competitive advantage. As a result, this study will use profitability and competitive advantage to measure the level of performance of the small businesses. Competitive advantage was chosen in this study to measure business performance because and according to, (Thong and Yap (1995, p. 429) telecommunications provides

“the opportunity for businesses to improve their efficiency and effectiveness to gain competitive advantage”. Thus, within the context of this study on the influence of telephony on small businesses in a developing country, a small business is said to have an enhanced competitive advantage when it is making use of a value creating strategy such as marketing, new product development, technology and process, which is not being adopted by current or potential competitors (Barney, 1991; Freel, 2000). Enhanced competitive advantage is defined as a dependent variable in this study, such that the business owner-manager of the small business can easily talk about. In addition, profitability was also chosen in this study, because it is one of the determinants of business performance in developing countries (Reardon et al, 1998). In the context of this study, a small business is said to have enhanced profitability based on its improved financial performance on the pre-tax profits of the business (Walker and Brown, 2004). As stated in Chapter Four, small business owners look forward to receiving rewards from the business as a result of their investment in monetary terms, time and energy. This reward is the business profit which in turn becomes an income for the business owner. Thus, this study assumes that a change in the business performance of the small business in Nigeria can be reflected by an increase in the level of business activities and processes through the use of telephony.

#### Growth Outcomes

This refers to the overall effect of increased access and use of telephony by small business which has the potential to contribute to the regional development of the business location. This element is used to assess the degree to which increased access to and the use of telephony in carrying out business activities can generate growth outcomes for the small business, which in turn can enhance the capacity of the small business to contribute to the development of the business location. As stated in Chapter Four, improvements in access to infrastructural facilities have an impact on small business activities and performance, which in turn reflects

on regional development (Acs, Desai and Hessels, 2008). The impact of small businesses on regional development includes job creation and improved service provision, as reviewed in the literature by Van Stel and Storey (2004). In this case, this study assumes that as a result of increased access to telecommunications services and the use of telephony by small businesses in Nigeria, the growth outcomes generated by the small businesses should contribute to the regional development of the business location in Nigeria.

### 5.3.2 The Research Hypothesis

As stated in Chapter four, there is little empirical research examining the relationship between access and use of telephony, business performance and regional development in developing countries. However, there is a significant amount of research investigating the adoption of telecommunications and business performance in developed countries. Empirical evidence has also shown that there is a significant association between ICTs and a firm's performance (Brynjolfsson and Hitt, 2003).

Thus, this study investigates the changing role of telecommunications in small businesses in Nigeria. In order to ascertain the changing role of telecommunications in small businesses, the effect of increased access to and the use of telephony on business performance and regional development are assessed. To be able to achieve this, three major hypothesis are formulated with each having subsets of hypotheses. The following are the research hypotheses for this study:

H<sub>1</sub>: The integration of telephony into business processes will depend on the extent of increased access to and use of telephony by small business owner-managers in Nigeria

- H<sub>1a</sub>: The extent of increased access to telephony for small businesses varies between rural and urban areas in Nigeria
- H<sub>1b</sub>: The extent of the effect of using telephony in business processes varies between rural and urban areas in Nigeria

- H<sub>1c</sub>: The extent of growth outcomes of increased access to and use of telephony by small businesses varies between rural and urban areas in Nigeria

H<sub>2</sub>: The influence of using telephony in business processes can significantly and positively predict enhanced small business performance in Nigeria.

- H<sub>2a</sub>: The influence of using telephony in business processes can significantly and positively predict enhanced competitive advantage of small business in Nigeria.
- H<sub>2b</sub>: The influence of using telephony in business processes can significantly and positively predict enhanced profitability of small business in Nigeria.

H<sub>3</sub>: The growth outcomes of increased access and use of telephony by small businesses in Nigeria can significantly and positively contribute to the development of the region of the business location.

- H<sub>3a</sub>: The creation of jobs by small businesses in Nigeria as a consequence of increased access and use of telephony can significantly and positively contribute to the development of the region of the business location.
- H<sub>3b</sub>: The improved performance of small businesses in Nigeria as a consequence of increased access and use of telephony can significantly and positively contribute to the development of the region of the business location.
- H<sub>3c</sub>: The significant growth of small businesses in Nigeria as a consequence of increased access and use of telephony can significantly and positively contribute to the development of the region of the business location.
- H<sub>3d</sub>: The improved service provision of small businesses in Nigeria as a consequence of increased access and use of telephony can significantly and positively contribute to the development of the region of the business location.

These hypotheses are tested in Chapters Seven and Eight for empirical analyses.

#### 5.4 Conclusion

In this chapter, the conceptual framework and research models were developed. The hypotheses were also presented. Based on the proposed conceptual framework, the location in which small businesses operate, combined with the infrastructural problems encountered by small businesses, and this combined with increased access and use of telephony in business processes explains enhanced business performance and business growth outcomes that promotes regional development of the business location..

From the conceptual framework, the research model was constructed using three theories; the theory of economic growth, theory of business growth and theory of entrepreneurship. The research model describes the links between the research constructs and their indicators; and the connections or relationships between the research constructs. This research model focused mainly on the key concepts of the study; entrepreneurship and small businesses (the influence of using telephony in business processes to enhance business performance of small businesses), small business location, telecommunications (increased access and use of telephony) by small businesses, and regional development (the growth outcomes of having increased access and using telephony by small businesses). Following the construction of the research model, the research hypotheses were presented. Overall, this chapter linked the different viewpoints of the literatures reviewed in the last three chapters to provide a reason for the study. The four key concepts of this study were systematically arranged so as to provide a theoretical synopsis of the whole research.

The next chapter will discuss the research methodology as well as the data collection methods which will be used to collect information from a

sample of small businesses in Nigeria. These data will be used in the empirical chapters at a later stage.

## CHAPTER 6

### RESEARCH METHODOLOGY

#### 6.1 Introduction

In Chapter Five, the conceptual framework and the research model was established based on the different viewpoints of the literature reviewed in Chapters Two, Three and Four to make a meaning for the study. The research questions and hypotheses were also presented.

In this chapter, the research design and methodology is explored. The methodology provides a framework for the collection and analysis of the research data. The aim of this chapter is to implement a framework with regards to the appropriate research approach that would assist this study in achieving its aim in investigating how owner-managers of small businesses in Nigeria perceive the effect of increased access and use of telephony on business performance and its potential in enhancing the capability of the small businesses to contribute to the regional development of the business location. The research approach that supports this research study is also discussed as well as the reasons for the justification of the selected approach. This is to create understanding and validity of the selected research approach.

This chapter is structured as follows: Section 6.2 identifies the research methodology; Section 6.3 presents the research approach of the study; Section 6.4 describes the study location and the research population; Section 6.5 describes the sample size; Section 6.6 describes the response rate; Section 6.7 discusses the sampling procedure; Section 6.8 discusses the data collection techniques; Section 6.9 discusses the questionnaire design; Section 6.10 presents the pilot study; Section 6.11 outlines the data coding and screening; Section 6.12 describes the data analysis; Section 6.13 outlines the difficulties with the study; Section 6.14 presents the ethical consideration; and Section 6.15 offers a summary of the chapter.

## 6.2 Research Methodology

Methodology refers to the theory of how a research should be undertaken (Saunders, Lewis and Thornhill, 2007). It refers to the process in which a researcher investigates and obtains knowledge about reality. There are three approaches to research and in choosing an appropriate approach to a particular research the researcher requires three elements of inquiry. These include knowledge claims, strategies of inquiry and methods (data collection, analysis and writing). The design of the research is centred on the knowledge of the researcher, the procedures informing the strategies of inquiry and the methods of data collection and analysis that are to be used (Punch, 2005; Creswell, 2009). These three elements of inquiry combine to identify the three different approaches to research: quantitative; qualitative; and mixed methods research which in turn are translated into processes in the design of research (Creswell, 2003), and are generally used in management and social sciences .

According to Creswell (2009, p. 4), quantitative research is a “means of testing objective theories by examining the relationship among variables which in turn can be measured, typically on instruments and the data can be analysed using statistical procedures”. While qualitative research is a “means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem”. According to Bryman (2004), both quantitative and qualitative research can be viewed as displaying a set of distinctive, but complementary epistemologically beliefs about what amount to acceptable knowledge.

Creswell (1994) used philosophical assumptions in differentiating between quantitative research and qualitative research. The assumptions used include; the ontological assumption: what is real; the epistemological assumption: the relationship of the researcher to that being researched; the axiological assumption: the role of values in the study; the rhetorical assumption: the language of the research; and the methodological assumption: the process of the research study. The differences between quantitative research and qualitative research as stated by Creswell are presented in Table 6.1.

Table 6.1: Differences between quantitative and qualitative research

Assumptions	Questions	Quantitative	Qualitative
Ontological Assumption	What is the nature of reality?	Reality is objective and singular, apart from the researcher	Reality is subjective and multiple as seen by participants in a study.
Epistemological Assumption	What is the relationship of the researcher to that researched?	Researcher is independent from that being researched	Researcher interacts with that being researched
Axiological Assumption	What is the role of values?	Value-free and unbiased	Value-laden and biased
Rhetorical Assumption	What is the language of research?	Formal Based on set definitions Impersonal voice Use of accepted quantitative words	Informal Evolving decisions Personal voice Accepted qualitative words
Methodological Assumption	What is the research process?	Deductive process Cause and effect Static design-categories isolated before study Context-free Generalisation leading to prediction, explanation and understanding Accurate and reliable through validity and reliability	Inductive process Mutual simultaneous shaping of factors Emerging design-categories identified during research process Context-bound Patterns, theories developed for understanding Accurate and reliable through verification

Source: Creswell, John W. (1994, p.5)

As presented in Table 6.1, the differences between quantitative research and qualitative research have been explored by researchers who used contrasting features in explaining the different approaches (Bryman, 2004). According to Bryman (2004); Franfort-Nachmias and Nachmias (2007); and Saunders, Lewis and Thornhill (2007), quantitative research involves a set of concepts that is used relative to the study, wherein theoretical work precedes data collection (deductive approach). It is positivism from an epistemological point of view. Saunders, Lewis and Thornhill (2007) described qualitative research as a process wherein theoretical explanation and concepts come out of data collection (inductive approach). It is interpretivist in an epistemological sense and ontological from a constructionist view, as knowledge is viewed as undefined, while social phenomena and its meaning is continually reviewed and accomplished by social actors. As stated by Das (1983), qualitative and quantitative research are not divergent, rather they focus on the different aspects of the same phenomenon (Amaratunga et al,

2002). Hence, the contrasting features between quantitative research and qualitative research should not be seen as constituting a hard and fast distinction; but is best considered as complementary and can be mixed in with diverse kinds of research.

Mixed method research generally refers to a combination of two research methods: the use of quantitative and qualitative techniques together to study the same topic, which is a tool used in gaining information and results, as well as assisting in the making of inferences and drawing of conclusions. It uses quantitative and qualitative data collection techniques and analysis procedures, either at the same time or sequentially, but does not combine the two (Saunders, Lewis and Thornhill, 2007). Mixed method research allows triangulation which is the combination of two methodologies in a study of the same phenomenon. The assumption of triangulation is based on its usefulness and the principle that the weakness in each single method is compensated for by counter-balancing the strengths of another (Amaratunga et al, 2002).

Furthermore, Rossman and Wilson (1994) explained that the link between quantitative data and qualitative data is considered to be comprehensive, thereby providing richer details and initiating new lines of thinking in a research. Thus, the mixed method approach assumes that quantitative data can facilitate the qualitative side of a study by finding a representative sample which can be useful for establishing generalisability, while qualitative data can facilitate the quantitative side of the study by helping with the conceptual development, instrumentation and interpretation of results (Hesse-Biber, 2010).

According to Gilmore and Coviello (1999), the advantages of using the mixed method approach in small business research is that data can be collected and analysed holistically, which allows the researcher to take account of the characteristics of the business; and the research can be conducted within a relatively dynamic environment. In addition, it allows flexibility in terms of interpretative techniques (Humerinta-Peltomaki and Nummela, 2006).

### 6.3 Choosing the Research Approach for the Study

In choosing the appropriate research method for this study, the researcher is guided by the following questions: what set of ideas does this study intend to follow in answering the research questions, what is the conceptual status of the things being studied and their relationship to each other, from whom will the data for this study be collected, and what tools and procedures will this study use in data collection and analysis? In answering these question, and based on the reflections of the quantitative and qualitative approach, this study adopts the two approaches sequentially in two phases, indicating a sequential mixed method approach. In the first phase, the researcher will employ the quantitative approach using questionnaires to collect data from the respondents, whilst in the second phase the researcher will employ the qualitative approach using images (photographs) and telephone interviews to complement the results of the first phase. Table 6.2 presents the research technique selection which is used in achieving the objectives of this study.

Table 6.2: Research technique selection

Research Objectives	Data / techniques	Justification
To explore how the entrepreneurial process of small businesses and increased access to telephony enhances business growth in Nigeria	Quantitative / Survey	The survey would generate data for statistical evidence.
To evaluate the perception owner-managers of small businesses have on the extent of increased access and use of telephony in Nigeria	Quantitative / Survey	The survey would generate data for statistical evidence.
To explore the usage pattern of telephony services by owner-managers of small businesses in Nigeria, in order to show that the contribution of increased access to telephony has enhanced the ability of small businesses to link with new markets and business networks	Quantitative / Survey  Qualitative/ telephone interview and Visual data	The survey would generate data for statistical evidence.  The telephone interview and analysis of the images would provide additional insights to the statistical evidence.
To explore how the use of telephony in business processes enhances small business performance in Nigeria	Quantitative / Survey  Qualitative/ telephone interview and Visual data	The survey would generate data for statistical evidence.  The telephone interview and analysis of the images would provide additional insights to the statistical evidence.
To demonstrate that growth outcomes generated by the use of telephony in small businesses can enhance the capability of small businesses in Nigeria to contribute to the regional development of the business location in which they operate	Quantitative / Survey	The survey would generate data for statistical evidence

As presented in Table 6.2, the research approach used in this study allows the researcher to justify the developed conceptual framework, test the

research hypothesis, as well as clarify the research questions in order to achieve the objectives of the study. The logic for selecting the quantitative and qualitative research approach is to collect rich data and generate an in-depth understanding of the relationship between access and use of telephony, business performance and regional development. The collection of quantitative data from samples of small businesses will contribute significantly to the current understanding from a regional perspective of the changing role of telecommunications for small businesses in a developing nation. The reasons for using the two approaches are stated below.

- The importance of using different research techniques is to boost the validity of the results, as well as to reduce the potential bias of depending on a single source of information. Furthermore, the benefit of using mixed method lies in the combined insights of the two approaches (Petter and Gallivan, 2004). Thus, the usefulness of the qualitative approach, using telephone interviews and visual data (images) ,in this study is to complement the results obtained from the questionnaires relating to one of the research objectives- 'to explore how the use of telephony in business processes enhances small business performance'.
- The combination of the two research approaches (quantitative and qualitative will assist the researcher to benefit from the usefulness of the two approaches, such that the weakness of one approach is counterbalanced by the strength of the other approach. The use of the quantitative approach in this study will help strengthen the limitations of the qualitative data in terms of external validity<sup>7</sup> and reliability<sup>8</sup>; while the use of the qualitative approach will help strengthen the limitations of the quantitative data in terms of internal validity<sup>9</sup> and reliability. The combination of the two

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<sup>7</sup>The extent to which the research results from a particular study are generalisable to all relevant contexts;

<sup>8</sup>The extent to which data collection techniques will yield consistent findings, similar observation would be made and conclusions reached by other researchers;

<sup>9</sup> The extent to which findings can be attributed to interventions, rather than any flaws in the research design (Saunders, Lewis and Thornhill, 2007).

approaches is important and significant for this study relating to telecommunications, small business performance and regional development (Petter and Gallivan, 2004), in order to enhance validity, reliability and generalisability (Burns, 2000; Amaratunga et al, 2002; Bryman, 2004; Saunders, Lewis and Thornhill, 2007; and Creswell, 2009).

- This study aims to explore the nature of the relationship between increased access and use of telephony, small business performance and regional development at the micro-level. In order to be able to explore these relationships, a quantitative approach is more suitable in assessing the relationship between the variables.
- This study requires that relevant data is collected from a large sample in order to be a representative sample of the target population (small businesses in urban and rural areas), which would enhance the possibility of generalisation of the study (Bryman, 2004). A quantitative approach is appropriate in collecting the relevant data for this study, as it allows the research to be carried out within a dynamic business environment in order to take account of the viewpoint of the respondents within a period of time (Petter and Gallivan, 2004).
- A quantitative approach is useful for the comparison of the small businesses in urban and rural areas and to investigate whether there are significant differences in the extent of increased access to telecommunications, the impact of using telephony in small business processes and growth outcomes of increased access to and use of telephony by small businesses. According to Saunders, Lewis and Thornhill (2007) and Creswell (2009), the quantitative approach facilitates the easy comparison of data and is useful for the gathering of large data sets.

#### 6.4 Population of the Research

The term "population" has been defined by researchers in different ways. According to Saunders, Lewis and Thornhill (2007, p. 606), population is defined as "the complete set of cases or group members". In addition, Collis and Hussey (2003, p.100), defined population as, "a body of people or any other collection of items under consideration for research purposes". Finally, Sekaran (2000, p.226) described population as the "entire group of people, events, or things of interest that the researcher wishes to investigate". Thus, population refers to all the group members a researcher is interested in investigating (Burgess, 2001). In this regard, the target population of this study is the small businesses in urban and rural areas in Nigeria. This study has included small businesses located in urban areas because they have almost a 25% greater chance of survival than their counterparts in rural areas. Small businesses located in rural areas are included to ascertain the effects of liberalisation of the telecommunications sector in rural areas, as it has been stated by Galperin (2005) that urban areas have a higher penetration of telecommunications in developing countries. In addition, most studies on telecommunications and small businesses have been based on fieldwork carried out in the rural setting, for example Duncombe and Heeks (2002); Galperin (2005); and Jesen (2005) or are case studies: Jagun et al., (2007). This research aims to fill the gap in literature on the study of telecommunications and small businesses based on fieldwork within urban and rural areas. Because of the apparent difficulties in investigating all small businesses in Nigeria, this study is restricted to small businesses within urban and rural areas of Lagos State, Nigeria.

The reason for choosing Lagos State as the choice of study location is primarily because Lagos State is the commercial capital and industrial hub of Nigeria, with almost all major companies having their headquarters there (Olokesusi, 2011). Lagos is mini-Nigeria in that almost every Nigerian ethnic group is represented. Lagos State is regarded as the sub-Saharan Africa's largest city that is open for foreign direct investment. The World Bank (2008), noted that remarkably, Nigeria received nearly 30%

of all foreign direct investment (FDI) from sub-Saharan Africa; thus making it one of the continent's premiere investment destinations. Lagos occupies 1,170 square km of land, 220 square km (18.9%) of which is water. Lagos is one of the most populous states in Nigeria according to the national population census conducted in 2005. Hence, Lagos State has a high concentration of human beings living on its small landmass. Lagos State's economy depends greatly on commerce and industries; with industries ranging from food, beverages, metal work, fashion design, foundries, roofing sheets and packaging abounding in the city. In addition, Lagos State is an important commercial centre in Nigeria, as it has the largest population of small businesses, wherein the number and size of small businesses in both organised and unorganised markets have continually increased (Olokesusi, 2011), thereby making it a significant location to facilitate the data collection process.

The criteria for inclusion in the target population of a research should be clearly defined and the group members that meet the criteria should be selected and included in the target population (Dozier and Repper, 1992). In order for the study to have a representative sample of Nigeria, it was crucial to draw samples from the different regions in Lagos State, given the diverse nature of the political economy in Nigeria and the variations that exists between the regions. A map of Lagos state is presented in Figure 6.1.



Figure 6.1: Map of Lagos State, Nigeria

## 6.5 Sample Size

The decision regarding the sample size of a study is dependent on a number of factors including time, cost, heterogeneity of the population, non-response and analysis techniques (Bryman, 2004). The factors of time and cost are very important for every researcher as it determines the type of sampling to be used in the research (Saunders, Lewis and Thornhill, 2007). According to Creswell (2009), accuracy cannot be guaranteed by a large sample size. In addition, the sample size is determined by the researcher based on the accessible resources as well as the expected errors (Finn et al, 2000). Hence, if a low response rate is anticipated, it is to be expected that the researcher would distribute more questionnaires than initially thought. Sample size could also be determined based on the experience of the researcher, in addition to the factors relating to cost and time. That notwithstanding, the sample size should not be less than thirty participants (David and Sutton, 2004; Saunders, Lewis and Thornhill, 2007).

In quantitative research, the larger the sample size, the lower the sampling error and the more precise the study results are in generalising the population (Saunders, Lewis and Thornhill, 2007). Based on the scarcity of available statistics on the small enterprise sector in Nigeria, it was difficult to determine the exact numbers of small businesses in Nigeria. In order to reduce error, the questionnaires were managed by both the researcher and the field assistants recruited to facilitate the questionnaire administration. It was also expensive to travel to all the regions; thus, the sample size of 250 was divided equally between the urban and rural regions to be studied to ensure that each region was represented proportionally within the sample. For the qualitative stage, telephone interviews were conducted with twenty-five participants chosen from the respondents that participated in the survey, based on their willingness. Moreover, five images (photographs) were also used.

## 6.6 Response Rate

The response rate is considered to be one of the most important survey essentials that researchers are concerned about when questionnaires are used as an instrument for data collection. The use of the questionnaire as a research instrument for the collection of information can rarely provide a full set of data, except in the case of 100% response rate (Fogelman and Comber, 2002). The importance of the response rate emerges when considering the method of analysis to be used for the data as well as justifying the dependability, validity and reliability of the result (Dillman, Sinclair and Clark, 1993). Response rate is determined in percentage, based on the number of completed and returned questionnaires divided by the total number of questionnaires sent out (Rada, 2005). There are several arguments as to what is, or what may be perceived as an acceptable, reasonable response rate and subsequently what is unacceptable. Researchers such as Church (1993) and Edwards et al (2002) have argued that a low response rate can affect the reliability of any study, while others such as Dillman (1991) argued that the response rate does not necessary have any effect on the accuracy of the survey results. However, Deutskens et al, (2004) stated that follow-ups and incentives are very important factors for maximising response rates. Moreover, Church (1993) and Dillman (2000) added that the length and presentation of questionnaires was also crucial in maximising response rate.

In order to maximise the response rate from the questionnaires used during the field work, many sequential steps were taken. The length and presentation of the questionnaire was considered to foster a respondent-friendly design in order to improve the response rate (Dillman, 2000). The respondents were briefed regarding the aim and objectives of the research study. They were also informed about the ethical considerations on privacy and confidentiality in the data collection process, data analysis and in the writing of the findings of the survey. The questionnaires were handed out personally to ensure that they were properly completed when returned (Kalman, 1988). Moreover, some respondents were given

monetary incentives which were very effective in motivating them to fill in the questionnaires, thereby increasing the response rate for the survey (Church, 1993; Dillman, 2000). In addition, three field agents were employed to consistently follow up respondents to increase the response rate significantly.

## 6.7 Sampling Procedure

According to Saunders, Lewis and Thornhill (2007 pg.610), a sample is “a subgroup or part of a larger population”. It is impracticable to survey all the members of the entire population due to the various factors as discussed in Section 6.5, especially factors relating to time and cost (Bryman, 2004; Saunders, Lewis and Thornhill, 2007). The preference of the type of sampling technique to be employed in a study is relative on the feasibility and sensibility of collecting data to answer the set research questions while at the same time achieving the research objectives (Saunders et al, 2003). There are two types of sampling techniques; probability sampling and non-probability sampling.

Probability sampling refers to the chance or probability of each case being selected from the population and is usually associated with survey and experimental research strategies. The techniques involved in this type of sampling include: simple random sampling; systematic sampling, stratified random sampling; and cluster sampling. Non-probability sampling is used when the probability of each case being taken from the total population is not known and the techniques include: convenience sampling, quota sampling, and purposive sampling (Saunders, Lewis and Thornhill, 2007).

In selecting a sample of small businesses in the various regions to be included in this study, three characteristics were adopted for the selection process, namely: the small businesses must have less than ten employees (CBN, 2004; National Policy, 2005); the small businesses must be using a telephone in the business; and the minimum number of years the small business had been in operation was placed at two years. It was decided

that to restrict the scope of the study the small businesses must meet these pre-set criteria.

In order to maintain stability with regards to operational years, researchers such as Larson (1992) suggested that small businesses must be in operation for at least five years as a yardstick to have successfully started the business and run it within the limitations to which the business is exposed. In addition, the number of operational years was also considered to ensure that the small business owner-managers could provide accurate information relating to the liberalisation of the telecommunications sector in Nigeria and their businesses.

Following the arguments above, stratified random sampling was chosen and used in selecting the sample to represent the population of this study. According to Saunders, Lewis and Thornhill (2007), stratified random sampling is suitable in choosing a sample size that is over a few hundred; it is accurate and useful if face to face contact is required. The stratified random sampling technique was chosen for this study as it allowed the researcher to use more than one characteristic in selecting the sample. For example it enabled the researcher to divide the sample (small businesses) into strata (urban and rural areas) in order to ensure the sample was representative of each stratum. It is a probability method that has similar requirements for sample size as simple random sampling and systematic sampling. Stratified random sampling has been used in both surveys and entrepreneurship research (Davidsson, 1989; Reynold et al, 2005) and is less costly and a quick way of gathering data (Bryman, 2004). Despite the criticisms of stratified random sampling, as explained by Bryman (2004), this sampling technique was chosen for convenience and practicality, based on the need of acquiring sufficient responses while also considering time and cost.

## 6.8 Data Collection Technique

The choice of the technique involved in collecting data in a study is dependent on the type of information to be collected. Creswell (2009)

suggests that all methods of data collection should be considered in choosing an appropriate data collection method for a particular study. In addition, he stated that the choice of technique should be selected based on whether the plan is to predetermine the type of information to be collected in advance of the study, or to allow it emerge from the participants in the study. The type of information gathered may be numeric (quantitative data) or non-numeric information (qualitative data).

Data can be collected in various ways, in different settings and from different sources. The methods involved in data collection include interviews (face to face, telephone, computer assisted, electronic media); questionnaires (personal/mail/electronic administered questionnaires); observation of individuals or events (videotaping or audio recording). The source of data can be primary or secondary. Primary data includes opinions on specific issues gathered from individuals, focus groups and a group of respondents, while secondary data includes company reports, government publications and industry analysis from websites, media and the internet (Sekaran, 2000; Saunders, Lewis and Thornhill, 2007).

The method used in collecting data in a study is relative to the approach the research adopts (Creswell, 2009). The qualitative research collects open-ended, emerging data with the main aim of developing themes from the data using strategies such as narrative, ethnography, grounded theory studies, or case studies. On the other hand, quantitative research collects data on predetermined instruments that yield statistical data using strategies such as experiments and survey.

According to Creswell (2009, p.179), a "survey provides a quantitative or numeric description of trends, attitudes or opinions of population by studying a sample of that population". It is used in collecting a large amount of information from a significant population in a highly economical way. Survey strategy is usually related to the deductive approach as it allows data to be collected quantitatively, which can then be analysed quantitatively using descriptive and inferential statistics. It allows the researcher to be in control of the research process and data collected can

be used to suggest reasons for particular relationships amongst variables and for producing models of the relationships. Surveys help to generate findings that can be applied to a whole population through a representative sampling of the whole population. They could be cross-sectional-data collected at one point in time or longitudinal-data collected over time.

The data collection techniques adopted in this study through survey strategy includes questionnaires, field observational survey and the semi-structured interview (Bryman, 2004; Saunders, Lewis and Thornhill, 2007).

#### 6.8.1 Field Observational Survey

This is a technique in which the researcher employs clearly formulated rules for the observation and recording of behaviour (Bryman, 2004). This is a systematic method which adopts a more detached position. It has a high level of predetermined structures which ensure that each participant's behaviour is systematically recorded so as to cumulate the behaviour of all the sample size in respect of each type of behaviour recorded. The resulting data generates information on different aspects of behaviour that can be treated as variables. The field observational survey is underpinned to a cross-sectional survey as it collects data on how things happen rather than why they happened (Saunders, Lewis and Thornhill, 2007).

Thus in this study, photographs were taken under structured observation during the fieldwork in line with the objectives of the study. The goal of using this technique is to enhance the descriptive validity of the study, wherein the systematic observation recorded and photographs taken would present real-life description of how owner-managers of small businesses use the telephony in enhancing their business performance.

### 6.8.2 Semi-Structured Interview

This is a technique in which the interviewer has a list of themes and questions for the respondents. It is conducted within a specific organisational context, such that some questions are omitted in particular interviews. The order of questions may also vary depending on the flow of the conversation between the researcher and interviewee. The nature of questions and the discussion involved allows data to be audio-recorded or taken through note-taking (Saunders, Lewis and Thornhill, 2007). The goal of this technique is to ensure that the same context of questioning is given to all interviewees so that responses from respondents can be reliably aggregated (Bryman, 2004).

Based on the discussion above, interviews were conducted from a list of themes with respondents who indicated their willingness to participate in a follow-up interview after the fieldwork.

### 6.8.3 Questionnaires

This is a predetermined set of questions that are designed to collect information from respondents. It is a technique of data collection in which each respondent is asked to respond to the same set of questions in a predetermined order (Saunders, Lewis and Thornhill, 2007). The questionnaire is one of the most widely used data collection techniques in survey strategy as it provides an efficient way of collecting responses from a large population prior to quantitative analysis. It is designed based on how it would be administered and the amount of contact the researcher has with the respondents. Based on this, there are two types of questionnaires: self-administered questionnaires and interviewer-administered questionnaire. The self-administered questionnaires are administered electronically (internet/intranet questionnaires); posted to and returned by respondents (postal/mail questionnaires); or delivered by hand to and collected later from respondents (delivery and collection questionnaires) (Bryman, 2004; Saunders, Lewis and Thornhill, 2007; and Creswell, 2009).

Following the discussion above, the self-administered questionnaire was adopted using the delivery and collection option to ensure the reliability of responses. As stated by Dillman (2000), respondents of self-administered questionnaires are relatively unlikely to answer in a way just to please the researcher as they believe certain responses are socially desirable (Saunders, Lewis and Thornhill, 2007). This technique was also chosen based on the size of the sample and to make the respondents aware of the seriousness of the researcher. The choice of questionnaire was also influenced by the time available for data collection; financial implications of data collection; availability of field workers to assist and ease of automating data entry. The advantage of using the questionnaire in this study is that its administration is cheap and quick, which is beneficial because the sample for this study is geographically widely dispersed.

In this study involving small businesses, the delivery and collection questionnaire was used in ensuring the respondent completed the questionnaires at their own pace (Bryman, 2004) in the absence of the researcher, as the field assistants delivered and collected the questionnaires and ensure the completed questionnaire were filled in accurately before collecting them from the respondents.

## 6.9 Designing the Questionnaire

The design of the questionnaire has an influence on the validity and reliability of the data collected in a study as well as the response rate of the respondents (Saunders, Lewis and Thornhill, 2007). Adhering to the basic ethical principles of designing a questionnaire, the words used in the questions should be easily understood by all the respondents, moreover, its intended meaning should be clear to the respondents. This is a fundamental requirement that should be observed by the researcher in order to produce an effective questionnaire (Fink, 2003). In this regard, a review of work relating to the study objectives were considered in order to ensure an effective questionnaire was designed for this study.

The questionnaire was created to enable accurate data to be collected thereby maximising reliability and validity. Saunders Lewis and Thornhill, (2007 pg.364) explained that “a valid questionnaire will enable accurate data to be collected, and one that is reliable will mean that these data are collected consistently”. The questions in the questionnaire were structured so that the variables can be adequately measured to answer the research questions and achieve the objectives of the study.

According to Frankfort-Nachmias and Nachmias (2007), an effective questionnaire design demands the accumulation of answers onto a combined scale such as the Likert scale, to ensure that all the items used in measuring the study constructs are effective and efficient, in order to ensure validity and reliability of the questions. In view of this, this study employed a five point Likert scale (1 - strongly disagree; 2 - disagree; 3 - no effect; 4 - agree; and 5- strongly agree) for most of the questions relating to the main variables of the study, using the same order of response category to avoid confusing the respondents (Dillman, 2000). This enables the respondents to indicate their perception on the extent to which they disagree or agree to a series of statements in the questionnaire. All questions contained in the questionnaire were mainly close-ended questions. The close-ended questions provide a number of alternative answers for the respondents to choose from (Dillman, 2000) and were developed to motivate the respondents to complete the questionnaires.

The questionnaire used in this study started with an introduction, stating the purpose of the survey relative to the objective of the study, while also giving clear instructions on how to complete the questionnaire. In addition, the confidentiality of information provided by the respondents was also made clear in the introduction (see Appendix A).

The questionnaire was divided into six sections. The first section sought information on the characteristics of the respondents and the small businesses. Respondents were asked five questions relating to their personal characteristics regarding their age; gender; educational background; employment status and business experience. Five other

questions were asked relating to the business characteristics regarding the size of the business, ownership structure of the business, sector type of the business, entrepreneurial characteristics of the business and length of time the business has had a telephone. These questions were relevant and included in the questionnaire to explain the link between business owners' demographic characteristics and small business performance by explaining the effect of demographic factors such as age, gender and educational background on the use of the telephone.

Section two of the questionnaire asked fundamental questions relating to small business development. Ten questions were asked in this section. The questions in this section include: 'what is your main reason for creating this business'; 'where is your business located'; 'why did you choose this location'; 'has the liberalisation of the telecommunications sector influenced your business networking'; 'how has network influenced your business'; 'have you introduced a new product or service since the liberalisation of the telecommunications sector'; 'have you introduced a new business strategy for your business since the liberalisation of the telecommunications sector'; 'have you opened a new branch of your business in another of the city or country since the liberalisation of the telecommunications sector'; 'how has your business changed in terms of competitive advantage since the liberalisation of the telecommunications sector'; and 'how would you describe your business in terms of profitability since the liberalisation of the telecommunications sector'. The aim of these questions in this section is to establish the impact of the liberalisation of the telecommunications sector on small business development.

Section three of the questionnaire asked for the opinions of the respondents relating to five statements on increased access to telecommunications in Nigeria for small businesses. The statements include: 'it is easy to acquire a telephone'; 'telephone signals are always available'; 'the price of telephony services is affordable'; 'most of the people you do business with have access and use telephones'; and 'other telecommunications services (internet, fax) are readily available and

affordable'. In addition, a closed question was asked on whether the respondents believe that increased access to telecommunications contributes to regional development. The aim of these questions in this section is to identify the extent to which small businesses have increased access to telecommunications as a result of the liberalisation of the telecommunications sector in Nigeria.

In section four, opinions of the respondents relating to nine statements were asked on the uses of telephony by small businesses. The statements include: 'you use the telephone regularly for business transactions'; 'you use the telephone to stay in touch with customer and suppliers'; 'the easiest way for customers to contact you is through the telephone'; 'your business partners contact you mainly by telephone'; 'the use of the telephones has helped you in knowledge sharing'; 'the use of the telephones has helped you gain access to more business partners'; 'the use of the telephones has increased the time spent networking with your business partners'; 'the use of the telephones has increased the support you get from family or friends'; and 'you find it difficult transacting business with someone who does not use or have access to a telephone'. The aim of these questions in this section is to establish how increased access to telecommunications has facilitated the use of telephony by small businesses to link with markets and business networks.

In section five, the opinions of the respondents relating to thirteen statements were required on the extent of the influence of using telephony in business processes had on business performance. The statements include: 'the acquisition of new customers for your businesses'; 'the ability of taking less time to make important business decisions'; 'the ability to access more information on new products and their usefulness'; 'the ability to acquire better market prices for your business'; 'the ability to reduce operational cost'; 'the ability to check product availability before travelling'; 'increase in sales and marketing strategy (telemarketing, advertising)'; 'your cost of doing business has increased since you started using a telephone'; 'the risk involved in doing business has reduced since you started using a telephone'; 'the use of the

telephones makes you more readily available for business purposes at all times'; 'your customers/suppliers refer you to others by giving them your telephone contacts'; and 'the use of the telephones helps you to save money by reducing the number of costly journeys for business purpose'. The aim of these questions in this section is to examine the extent of the influence the use of telephony services has on business processes.

Finally, section six asked for opinions of the respondents relating to four statements on the growth outcomes of use of telephony by small businesses. The statements include: 'the use of the telephones has created a condition for your business to create new jobs'; 'overall, the use of the telephones has improved the performance of your businesses'; 'overall, the use of the telephones has contributed significantly to the growth of your businesses; and 'your service provision has improved through the use of the telephones'. The aim of these questions in this section is to evaluate the extent of the impact of having increased access and use of telephony by small business.

In effect, all the questions in the questionnaire were tailored to answer the research questions and ascertain the nature of the relationship between increased access and use of telephony, small business performance and regional development in order to achieve the set objectives as well as the overall aim of the study on the changing role of telecommunications in Nigeria for small businesses.

#### 6.10 Pilot Study

According to Remenyi and Williams (1998) and Olsen (2004), a pilot study is a small-scale model of the actual data collection process of the study in order to discover the possible limitations, uncertainty and problems that may arise in all aspects of the research process. Hence, the pilot study enables the researcher to make appropriate corrections before collecting the data. A pilot test should be conducted prior to collecting the actual data. This enables the researcher to refine the questions in the questionnaire so that the respondent does not have any problem

answering the questions as well eliminating any problems involved in data recording (Saunders, Lewis and Thornhill, 2007).

In addition, pilot testing enables the researcher to assess the questions validity and the reliability of the data to be collected (Bryman, 2004). The number of people used in a pilot test is dependent on the research questions, objectives, time and money available to the researcher and how well the initial questionnaire has been designed (Saunders, Lewis and Thornhill, 2007).

In this study, two phases of pilot tests were carried out. The first phase was undertaken between 10<sup>th</sup> April and 15<sup>th</sup> May, 2010, when the researcher travelled to Nigeria in order to identify appropriate respondents who would be used for the data collection. Some of the potential respondents were also approached to inform them of the researcher's intention to carry out a survey. The comments and suggestions of the respondents were noted as appropriate, and were based on the five questions the researcher asked relating to the study and how best to conduct the survey.

The second phase was conducted at the Aberdeen Business School (ABS). Ten people, including a visiting Spanish professor of entrepreneurship, five research students and four friends that had small businesses in Nigeria before relocating to the UK, took part in the pilot test. Valuable comments and suggestions were received from this group, such as how long it took to complete the questionnaire, clarity of instructions and any questions that might make respondents feel uneasy,. All the suggestions were considered, especially with regards to the length of the questionnaire. These comments were clearly helpful as the respondents did not complain about the length of the questionnaire.

## 6.11 Data Coding and Screening

An essential element before proceeding with quantitative analysis is the coding of data (Gilbert, 2008). Codes are the building blocks for theory or model building, which implicitly or explicitly embodies the assumptions underlying the analysis of data in a study as well as the foundation on which the analyst arguments rest. The primary purpose of coding in this study is to translate the respondents answers into numbers for subsequent statistical analysis .The information derived from the questionnaires employed in the field study need to be entered into a codebook before it can used in a statistical software (Pallant, 2005). The codebook for this study was prepared by defining and labelling each of the variables and assigning numbers to each of the possible responses. The codebook was recorded and stored on a computer file so that it could be used as guide to subsequent applications (Gilbert, 2008).

In this study, coding was completed after data collection as the researcher was unsure of the likely responses from the respondents (Saunders, Lewis and Thornhill, 2007). In order to put the coding process of this study into perspective, the following steps were taken; developing a coding frame for pre-coded; creating the codebook and coding instructions, coding the questionnaires; transferring the values onto a computer and checking and screening the data (Fieldman, 2008). The actual codes used in this study were numeric; mutually exclusive; exhaustive and were consistently applied (Gilbert, 2001).

Each question in the questionnaire has a unique variable name and each individual respondent has a complete set of values for each of the variables. This results in the production of a data file. The data file for this study was prepared in a Microsoft excel program consisting of numbers, such that the rows correspond to each respondent's response and the columns correspond to each variable. The data file on the excel spread sheet was then imported into SPSS for analysis.

The data for this study has been collected from small businesses within urban and rural areas in Lagos State, Nigeria. Researchers are keen to

assess the suitability of the data in hand to check whether they align within known conventions and statistical standards before proceeding with the analysis process (Hair et al, 2003). A data check is carried out for completeness and consistency to avoid data giving illogical results or biased outcomes from false conclusions (Saunders, Lewis and Thornhill, 2007). According to Hair et al (1998), any breach of the measurement conditions and obligations will lead to biased outcomes or non-significant relationships between the study variables. Normally scholars use outliers and out-of range values to screen data. This study employed the use of certain statistical tests, such as missing data and multicollinearity to accomplish this goal.

Missing data occurs as a result of a respondent's failure to answer a question, either accidentally or because they do not want to respond (Bryman, 2004). Missing data arises either during data collection or because of data entry problems and can impact the validity of the findings of the study. The missing values in this study were defined by checking the frequencies of each question within each variable. They were then detected when the codes were entered into the SPSS software. A number of the missing values were defined easily by some of the demographic questions, such as the age of the business, ownership structure and location of business. The missing values which could not be defined were data that was missing because the questions did not apply to the respondent. The missing values were coded using an arbitrary and salient number -9 as the negative sign helps the number to stand out as an impossible mark (Kinnear and Gray, 2010). It is preferable to perform this process before proceeding with the multicollinearity and correlation tests analysis.

Multicollinearity involves the correlation between two or more independent variables. Researchers must test for and remove multicollinearity if present in the study (Hair et al, 2003). This study checked for multicollinearity to find any indications that may suggest problems with the outcomes by examining the correlation matrix for the independent variables, as well as checking the tolerance values and variable inflation

factor. There was no change in the model outcomes of the different independent variables used; thus, multicollinearity is not present in this study. The problem of multicollinearity occurs when high correlations exist among independent variables (Hair et al, 2003), thereby making the process of determining the effects of every single variable difficult when one independent variable is highly correlated with other independent variables (Morrison, 1969; Murphy et al, 2005).

## 6.12 Data Analysis Techniques

There are two types of statistical analyses, namely; descriptive and inferential statistics (Sekaran, 2000). All the data collected for this were analysed and interpreted with descriptive statistics<sup>10</sup>, while the data of the main study variables were analysed and interpreted with inferential statistics<sup>11</sup>. In addition, telephone interviews and visual data were analysed and interpreted to support the results of the statistical analyses. In this regard, there are a number of statistical software applications that support quantitative data analysis. These include SPSS for windows, SAS for windows, Minitab for windows, and Stata for windows. This study employed SPSS V.17.0 for windows in analysing the data collected statistically. The statistical techniques and qualitative techniques used in analysing the data for this study are discussed below.

### 6.12.1 Reliability Analysis

According to Frankfort-Nachmias and Nachmias (2007, pg.154), reliability refers to the “the extent to which a measuring instrument contains variable errors, that is, errors that appear inconsistently between observations either during any one measurement procedure or each time a given variable is measured by the same instrument”. Thus, reliability is the ratio of the true score variance to the total variance in the scores as measured (Streiner, 2003). Cronbach Alpha is the most commonly used

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<sup>10</sup> Descriptive statistics enables researchers to summarise and organise data in an effective and meaningful way.

<sup>11</sup> Inferential statistics allows researchers to make decisions or inferences by interpreting data patterns.

reliability measure. The Cronbach coefficient is the indicator of the internal consistency of the instruments and the values varies on a scale of 0 to 1. A Cronbach coefficient indicating a value of 0 denotes no internal reliability and 1 denotes perfect internal reliability (Frankfort-Nachmias and Nachmias, 2007). According to Pikkarainen et al, (2004), 0.7 is the acceptable reliability coefficient, although lower values are used in some literatures. This study will make use of Cronbach Alpha to test the reliability of the indicators measuring the extent of the influence of using telephony in business processes and the growth outcomes of increased access to telecommunications and the use of telephony by small businesses.

#### 6.12.2 Frequency and Percentages

The first step a researcher takes after data coding and processing is to construct frequency distributions in order to examine all the variables considered in the study (Frankfort-Nachmias and Nachmias, 2007). Frequencies refer to the number of times different subcategories occur (Sekaran, 2000). The frequency distribution displays a table for a particular variable showing the number and percentages in each category of the variable. In this study, frequencies and percentages are used for most variables, for example the characteristics of the respondents (age, business experience, business size) to help describe the sample.

#### 6.12.3 Mean Score

The mean, often referred to as average, is the most frequently used measure of central tendency (Frankfort-Nachmias and Nachmias, 2007); and presents a general picture of the data without unreasonably inundating one with each of the observations in a data set (Sekaran, 2000). In this study, the mean scores are used in representing the distribution of the variables that are measured at interval levels.

#### 6.12.4 T-test

The t-test indicates whether or not there is a significance difference in the mean scores of variables between two groups (Sekaran, 2000). In this study, the independent t-test was used to examine the differences between the urban and rural small businesses with regards to a particular variable, for example increased access to telecommunications. While the one sample t test was used to compare the mean scores to a test value within urban areas and rural areas separately with regards to a particular variable, for example the use of telephony by small businesses.

#### 6.12.5 Mann Whitney test and Cross tabulation

A Mann Whitney test is used to test for differences between two independent variables on a continuous measure (Pallant, 2010). It is used in this study firstly, because the variables tested are measured on a continuous scale and secondly to confirm the results of the independent t-test. Cross tabulation is used in this study to carry out a cross analysis on a specified variable on the results obtained from urban and rural small businesses.

#### 6.12.6 Spearman Correlation

The spearman correlation test is used in this study to explore the strength of the relationship between the continuous explanatory variables (Pallant, 2010). Correlation coefficients (such as spearman rho correlation) provide a statistical summary of the direction and the strength of the linear relationship between two variables. The correlation coefficients range from -1 to +1. The sign at the front signify whether a positive correlation exists: as one variable increases, the other variable increases; or whether a negative correlation exists: as one variable increases, the other variable decreases. Spearman correlation will be used in this study to check for multicollinearity among the independent variables that are to be used for the regression analysis, for example the impact of using telephony in business processes.

### 6.12.7 Logistic Regression

Logistic regression is used as a statistical technique in this study for the following reasons; the dependent variable is not required to be normally distributed; a linear relationship between the dependent variable and independent variables is not assumed; the dependent variable is not required to have equal variance for each level of the independent variable; normally distributed error terms are not assumed; an independent variable can either be categorical or continuous; and it does not require that the independent variable be at intervals (Hosmer and Lemeshow, 2000). In order to perform a logistic regression, the dependent variables have to be dichotomous<sup>12</sup> and the independent variables can either be continuous, categorical or both.

Logistic regression is used to model non-continuous response (categorical) variables. Logistic regression allows the researcher to test models that explain categorical outcomes (Pallant, 2010). In this study, three logistic regressing models in line with the research hypotheses, will be tested to provide an indication of the relative importance of each of the explanatory variables and to test the hypothesised relationship in the research model; two models will be analysed to determine the business processes based on the extent of the influence of using telephony that contributes significantly to enhanced business performance (enhanced competitive advantage and profitability); and one model will be analysed to determine the growth outcomes of small businesses having increased access to and use of telephony which significantly contribute to regional development of the business location.

In this study the results of the logistic regression are interpreted based on the evaluation of the model performance; the coefficient signs; the significance of the coefficient; and the meaning of the odds ratios. It is important to assess the goodness-of-fit of an estimated logistic regression model in order to ensure the model contains explanatory variables that are effective in explaining the outcome variable (Hosmer and Lemeshow, 2000). In evaluating the model performance for this study, the statistical

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<sup>12</sup> The variable has a zero-one distribution (Pallant, 2010)

significance of the model chi-square is analysed to indicate whether the set of explanatory variables is good for the model; and whether the model summary (Cox & Snell R Square and Nagelkerke R square) provides information that supports the usefulness of the model.

The interpretation of the coefficient in logistic regression is that it describes the change in the logit of the outcome variable associated with a one-unit change in the explanatory variable. The logit of the outcome is the natural logarithm of the odds of the outcome occurring. In addition, the interpretation of the odds ratio represents the change in the likelihood of being in one of the categories of the outcome variable when the value of an explanatory variable increases by one unit, has more intuitive appeal than the logged odds ( $\beta$ ), and can express effects in a single coefficient. The effects on odds are multiplicative rather than additive, but still have a straightforward interpretation.

An example of the logistic regression model tested in this study is estimated as follows:

$$C_i = \alpha + \beta_1 CUST_i + \beta_2 TIME_i + \beta_3 INPDT_i + \beta_4 BEMARP_i + \beta_5 ROPCOST_i + \beta_6 ISAMAST_i + \varepsilon_i$$

Where  $C_i$  is Enhanced competitive advantage

The variables used in the analysis are defined as follows:

Dependent variable (A dichotomous variable) - Enhanced Competitive Advantage

$C_i$  - Is a binary variable where small businesses were given 1 if they had enhanced competitive advantage since the liberalisation of the telecom sector; otherwise, the small businesses that did not have enhanced competitive advantage were given 0.

Explanatory Variables: Six Continuous variables (measured on a five point Likert-scale: 1- Strongly Disagree; 2- Disagree; 3- No effect; 4- Agree; 5- Strongly Agree)

CUST- Is a measure of the extent of the influence of using telephony in the acquisition of new customers.

TIME- Is a measure of the extent of the influence of using telephony to reduce the time it takes to make important business decisions.

INPDT- Is a measure of the extent of the influence of using telephony to access more information on new products

BEMARP- Is a measure of the extent of the influence of using telephony in acquiring better market prices

ROPCOST- Is a measure of the extent of the influence of using telephony in reducing operational costs

ISAMAST- Is a measure of the extent of the influence of using telephony to increase sales and marketing strategy.

The logistic regression is based on the logistic cumulative probability function and takes the form in this study as follows:

$$P_i = \frac{e^{C_i}}{1 + e^{C_i}}$$

Where  $P_i$  is the probability that a small business will have enhanced competitive advantage with one unit change in the extent of influence of using telephony in business processes,  $e$  is the natural log and  $C_i$  is the enhanced competitive advantage (the logistic regression equation)

The odds that the small business will have enhanced competitive advantage are related to the probability by this equation:

$$C_i = \ln \left( \frac{P_i}{1 - P_i} \right)$$

Where  $C_i$  is the natural log of the odds that a small business will have enhanced competitive advantage given the explanatory variables;  $1 - P_i$  is the probability of a small business not having enhanced competitive advantage based on the extent of influence of using telephony in business processes.

#### 6.12.8 Visual Data and Telephone Interview Analysis

Five of the eleven photographs taken during the fieldwork will be analysed in terms of the impact of the use of telephony and enhanced business performance. These five photographs were specifically chosen because of their importance in achieving the research objectives. Some of the respondents involved in the photographs and those that indicated their willingness to participate in an interview by providing their telephone contact details in the questionnaire will be interviewed by telephone (semi-structured interview) to establish how the impact of using telephony services enhances their business performance. The interviews will be transcribed into themes relating to the study and the findings will be reported using textual analysis<sup>13</sup>. The technique that will be used to analyse the photographs is called content analysis<sup>14</sup>, wherein the photographs are used in this study are in an interpretive format, regarding the impact of the use of telephony by small businesses on enhanced business performance.

#### 6.13 Difficulties experienced when conducting the Research

A major problem encountered by the researcher during the research process relates to the issue of data, especially secondary data. The researcher intended collecting secondary data but this was hampered as the organisations that were thought to have the required data, in fact did not. Moreover, the data available were out-dated and not relevant to the study. In addition, the researcher also made an effort to gain access to secondary data on telecommunications development in Nigeria via the Nigeria Communications Commission (NCC), but the researcher was

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<sup>13</sup> Textual analysis is a method of gathering information about how other human beings make sense of the world (McKee, 2003). It seeks to develop themes, meaning and patterns in textual data to provide interpretation which display how concepts are operative in the data (Gephart, 1999).

<sup>14</sup> Content analysis is an approach to the analysis of documents and text which may be either printed or visual and seeks to quantify contents in terms of predetermined categories and in a systematic and replicable manner. It is a technique used for making inferences by objectively and systematically identifying specified characteristics of messages (Bryman, 2008).

unable to access the data due to the time constraints of the data collection.

Another difficulty encountered by the researcher during the fieldwork is related to sampling. As there was no available information with regards to the number of small businesses in the various regions used in the survey, the researcher found it challenging to ensure a representative sample of the target population was used in the survey. Furthermore, the researcher had to make several trips to a number of the small businesses in order to find a convenient time for the owner-managers of the small businesses to be able to complete the questionnaire.

The researcher also encountered issues relating to travelling around the different regions. This was related to travel cost and risk of life as Nigeria was experiencing certain security issues during the time of this study's data collection. Also, the researcher was faced with financial constraints relating to the employment of the field assistants, as well as some of the respondents that had to be given incentives to motivate them to fill in the questionnaires.

Finally, some of the respondents were not eager to share their information as they were unsure about the authenticity of the study.

#### 6.14 Ethical Consideration

In line with university regulations, all ethical issues were duly considered. In particular, the ethical issue in this study is considered mainly with the participants. The information provided by the respondents was strictly confidential and their privacy was guaranteed. The issue of confidentiality was explained both in the introduction of the questionnaire and during the fieldwork. In addition, the issue of anonymity was considered by the researcher, in which the participants were assured that they would not be identified with regards to the data given. The photographs taken during the fieldwork were with the permission of the respondents and their use was explained to them. Anonymity and confidentiality was considered in

this study, because basically they affect the response rate of the respondents, as respondents may be more willing to respond if they are not afraid that their answers may identify them (Sheehan and Hoy, 1999).

#### 6.15 Conclusion

In this chapter, appropriate methodology for this research was presented. The sampling procedure, questionnaire design and data analysis techniques were also discussed. Furthermore, the difficulties encountered by the researcher during the data collection process were highlighted and the ethical issues relating to the study were presented.

In the next two chapters, the data collected will be analysed, models tested and findings presented.

## CHAPTER 7

### DESCRIPTIVE STATISTICS AND RESEARCH FINDINGS

#### 7.1 Introduction

In Chapter Six, the research methodology and data collection methods of this study were discussed. This was undertaken to provide an in-depth description of the methods employed in this study and as justification for using the chosen methods. In summary, the research methodology chapter provides a preliminary introduction to the empirical stage of this research.

This study investigates how owner-managers of small businesses in Nigeria perceive the effect of increased access and use of telephony on business performance and its potential in enhancing the capability of the small businesses to contribute to the regional development of the business location. This is to be accomplished through the study of small businesses located within urban and rural areas in Nigeria. In addition, the study intends to explore in greater detail the nature of the relationship between increased access and the use of telephony, small business performance and regional development at the micro-level.

In order to achieve the set objectives of this study as stated in Chapter One, this chapter and the next seeks to provide answers to the research hypotheses which were earlier set out in Section 5.3 of Chapter Five.

This chapter presents the descriptive analysis and findings of the data collected from a sample of small businesses located within urban and rural areas in Nigeria. This chapter is structured as follows. Section 7.2 describes the profile of the respondents used for the data analysis. Section 7.3 presents the characteristics of the respondents. Section 7.4 provides descriptive statistics on entrepreneurship and small business development. Section 7.5 presents descriptive statistics on telecommunications and small businesses. Section 7.6 offers a summary

and discussion of the results. Section 7.7 provides a summary to the chapter.

## 7.2 Profile of Respondents used for the Data Analysis

The data used in this research analysis was generated using the questionnaire designed for the survey of small businesses in Nigeria. Field assistants, who are recent graduates from the university, were employed for the administration of the questionnaires in the two areas under study to help in the distribution, follow-up and collection of the completed questionnaires from the chosen small businesses. The valid respondents used for the data analysis included 120 from the urban area and 78 from the rural area. Thus, the data analysis and research findings were based on a total of 198 valid respondents which were obtained from the areas under study in Nigeria. The overall response rate for this study was approximately 79%, which is considered good and is expected to enable this research to make generalised findings regarding telecommunications, small business performance and regional development in Nigeria, provided the findings hold in each of the areas under study, as these areas are a true representation of the study location. The response rate of respondents is presented in Table 7.1 below.

Table 7.1: Response rate of the Respondents

Questionnaires sent out	Questionnaires returned	Questionnaires used for analysis	Response rate
250	205	198	79.2%

Source: Field survey, 2011

As shown in Table 7.1, the response rate for this study is 79.2%, which is considered good when compared to other related studies in the telecom sector. Dholakia and Kshetri (2004) obtained only an 11% response rate when they used a random sample to collect data from small businesses that adopted internet for their business. Other researchers in this sector achieved similar response rates. For example, Rabayah and Qalalwi (2011) obtained 92.2% of responses using a stratified sample to collect

data from microenterprises on the impact of mobile telephony on developing country enterprises. Wamuyu and Maharaj (2011) achieved a response rate of 94.9% and a non-response rate of 5.1% using a stratified sample to collect data from microenterprises on the influence of the use of mobile telecommunications on microenterprises and the impact of their use on organisational performance. As indicated in Table 7.1, 205 questionnaires were returned, however, only 198 of the questionnaires were used in the analyses. Seven questionnaires were not included in the analyses because they did not meet the definition of small businesses considered for this study. The selection of the sample was based on the criterion of the definition of small businesses according to size in Nigeria, as outlined by the Small and Medium enterprises development association of Nigeria (SMEDAN). This was discussed in Chapter Three and adopted for this study. The definition, which acted as a criterion, states that small businesses are those with less than ten employees.

Respondents were identified using a stratified random sampling technique, while also bearing in mind the criterion for sample selection. In addition, some measures, such as ensuring the small businesses chosen in each region were not clustered in a particular zone and were not engaged in similar business activities, were taken into account to ensure that some degree of geographical spread within the areas chosen for the study was achieved.

Furthermore, the responses obtained were good and this can be attributed to the face to face method of questionnaire administration used, in which the field assistants distributed questionnaires, waited and/or returned shortly thereafter to collect them. This was quite tedious and expensive, but that was the only reliable way to obtain a good response rate.

### 7.3 Characteristics of Respondents

As discussed in Section 7.2, 198 responses were obtained for the study's questions. The characteristics of the respondents are presented in frequency and percentage terms. At the time of this survey, all the small businesses were in business; were still trading and none were on the verge of closing down.

This section is divided into two parts: the personal (demographic) characteristics of the respondents and the general characteristics of the small businesses surveyed.

#### 7.3.1 Personal Characteristics of the Respondents

This subsection presents a profile of the personal characteristics of the 198 respondents, the owner-managers of the small businesses surveyed. The results from the analysis of the personal characteristics of the respondents provide general information about the owner-managers of small businesses that have used telephony since the liberalisation of the telecom sector. The characteristics analysed include the respondents' age, gender, educational background, employment status and their business experience.

##### 7.3.1.1 Age of the Respondents

The ages of the owner-managers of small businesses are presented in Table 7.2 below.

Table 7.2: Ages of Owner-Managers of Small Businesses

Age Categories (years)	Frequency	Percent
less than 30	68	34.3
31-40	99	50.0
Above 40	31	15.7
Total	198	100

Source: Field survey, 2011

As shown in Table 7.2, 50% of the respondents are between the age of thirty-one and forty years old and about 34.3% are less than thirty. The data presented demonstrates that most owner-managers of the small businesses surveyed were between the age of twenty years and forty years old. This suggests that the majority (84.3%) of the owner-managers of small businesses surveyed are young and supports the report of the National Bureau of statistics (2005), which stated that the population of Nigeria is relatively young with 55% of the country's population between the age of fifteen years and fifty-five years old. This age group constitutes an active labour force in developing countries (Willmore, 2007).

### 7.3.1.2 Gender of Respondents

The gender of the owner-managers of small businesses is presented in Table 7.3 below.

Table 7.3: Gender of Owner-Managers of Small Businesses

Categories	Frequency	Percent
Male	146	73.7
Female	52	26.3
Total	198	100

Source: Field survey, 2011

As shown in Table 7.3, the gender distribution shows that majority of the respondents (73.7%) are male and 26.3% are female. The difference between the number of male and female owner-managers of small businesses can be explained by the traditions of Nigerian society and the persistent notion that men (more than women) have primary responsibility for the home and the family (Pyramid, research, 2009).

### 7.3.1.3 Educational Background of the Respondents

Table 7.4 below presents the educational background of the owner-managers of small businesses.

Table 7.4: Educational Background of the Owner-Managers of Small Businesses

Categories	Frequency	Percent
Secondary education	25	12.8
Tertiary education	173	87.4
Total	198	100

Source: Field Survey, 2011

As can be seen in Table 7.4, all the owner-managers of small businesses in this survey have some form of education. Analysis shows that 87.4% of the study participants are graduates from colleges of further education, polytechnics and universities and 12.8% have secondary school level of education. This data demonstrates that the owner-managers of small businesses are educated and are adequately knowledgeable in order to provide data on the effect of increased access to telecommunications.

### 7.3.1.4 Employment Status of the Respondent

Table 7.5 presents the employment status of the owner-managers of small businesses below.

Table 7.5: Employment Status of the Owner-Managers of Small Businesses

Categories	Frequency	Percent
Full time employment	153	77.3
Part time employment	45	22.7
Total	198	100

Source: Field survey, 2011

As shown in Table 7.5, the employment status of the owner-managers of small businesses used in this study reveals that the majority of the respondents (77.3%) were engaged full time in business, and 22.7% were engaged part-time. This data show that most of the owner-managers of small businesses chose small businesses as their main source of employment for survival, which supports the report by the National Bureau of Statistics (2005) that the highest recorded unemployment rate was found in people between the ages of 15 and 44 years.

### 7.3.1.5 Business Experience of the Respondents

Table 7.6 presents the owner-managers of small businesses level of experience.

Table 7.6: Experience of the Owner-Managers of Small Businesses

Categories	Frequency	Percent
Less than 3 years	34	17.2
3-5 years	71	35.9
6-10 years	86	43.4
Above 10 years	7	3.5
Total	198	100

Source: Field survey, 2011

As shown in Table 7.6, 17.2% of the respondents had less than three years' experience in business, 35.9% have between three and five years', 43.4% have between six and ten years' and 3.5% of the respondent have over ten years' experience. This suggests that all the owner-managers of small businesses in this study have relevant business experience. The analysis shows that 96.5% of the study participants have been in business long enough to provide data on the effect of increased access to telecommunications as result of the liberalisation of the telecommunication sector in 1999.

### 7.3.2 General Characteristics of the Small Businesses Surveyed

This subsection presents a profile of the 198 small businesses surveyed in this study. The results from the analysis of the general characteristics of the small businesses surveyed are to provide general information about the small businesses since the liberalisation of the telecommunications sector. The characteristics analysed include the size of the small business, business ownership type, business sector type, entrepreneurial characteristics of the business and the length of time the business has had telephones.

#### 7.3.2.1 Size of Business

Table 7.7 below presents the size of the small businesses.

Table 7.7: Size of the Small Businesses

Number of employees	Frequency	Percent
0-3	95	48.0
4-6	57	28.8
7-10	46	23.2
Total	198	100

Field survey, 2011

As shown in Table 7.7, the distribution shows that 48% of the businesses had three or less employees, 28.8% had between four and six employees, while 23.2 had between seven and ten employees. This implies that the criterion used in choosing the businesses were observed. The small businesses (micro- and small enterprises) used in this study were classified as such using the definition made by the Small and Medium enterprises development association of Nigeria (SMEDAN), which was discussed in Chapter Three and adopted for this study. The definition states that small businesses are those businesses with less than ten employees. A small business in a developing country is a type of business which is very small (Burgess, 2002), and has up to nine employees (Bridge and Peel, 1999). The size of the business is considered important in this study as different studies have shown that there is a positive

relationship between the size of the business and access to telecommunications (McDonagh and Prothero, 2000).

### 7.3.2.2 Business Ownership Structure

Table 7.8 presents ownership of the small businesses below.

Table 7.8: Ownership structure of the Small Businesses

Categories	Frequency	Percent
Sole proprietorship	148	74.7
Partnership	50	25.3
Total	198	100

Source: Field survey, 2011

As can be seen in Table 7.8, analysis of the ownership structure of the businesses surveyed, shows that the majority of the respondents (74.7%) solely owned their business. In addition, the findings on business ownership reveal that about 25.3% are in partnership with another person. This data description supports Ugochukwu (2003) who stated that a major feature of small businesses in Nigeria is in its ownership structure, which is either a sole proprietorship or partnership. The number of businesses in partnership is small compared to those in sole proprietorship and this could be attributed to the high level of mistrust among people, which is one of the factors hindering business partnership in Nigeria (Ugochukwu, 2003).

In addition, the differences in the business ownership structures could be as a result of the high cost and awkward process of incorporating a limited liability company in Nigeria.

### 7.3.2.3 Business Sector Type

Table 7.9 below presents the various sectors of the small businesses surveyed.

Table 7.9: Sector of Small Businesses Surveyed

Categories	Frequency	Percent
Telecom services	40	20.2
Agriculture	35	17.7
Food	35	17.7
Fashion design	27	13.6
Energy services	20	10.1
Health services	12	6.1
Automobile services	10	5.1
Entertainment	7	3.5
Media	7	3.5
Consultancy	5	2.5
Total	198	100

Source: Field Survey, 2011

As shown in Table 7.9, a total of ten different sectors were surveyed. This implies the findings of this study can be generalised over a broad range of small businesses in Nigeria. The distribution shows that 20.2% of the respondents belonged to telecom services, 17.7% food, 13.6% fashion design, 17.7% agriculture, 6.1% health services, 10.1% energy services and 5.1% automobile services. Others include consultancy (2.5%), media and entertainment (3.5%). The reason for the distribution may not be unconnected with the fact that little capital is needed in setting up the type of businesses surveyed in this study.

### 7.3.2.4 Entrepreneurial Characteristics of the Business

Table 7.10 below presents the entrepreneurial characteristics of the small businesses.

Table 7.10: Entrepreneurial Characteristics of the Small Businesses

Categories	Mean	S.D.	1	2	3	4	5
It is my primary source of income.	3.8	1.39	24 (12.1%)	19 (9.6%)	13 (6.6%)	59 (29.8%)	83 (41.9%)
My business is independently owned	4.19	1.04	8 (4.0%)	7 (3.6%)	23 (11.6%)	62 (31.3%)	98 (49.5%)
My business involves constant risk taking	3.65	1.19	14 (7.1%)	23 (11.6%)	34 (17.2%)	75 (37.8%)	52 (26.3%)
My business involves creativity and innovation	4.0	0.95	1 (0.5%)	17 (8.6%)	27 (13.6%)	78 (39.4%)	75 (37.9%)

Source: Field survey, 2011

Notes: S.D- Standard deviation

(1- Strongly disagree; 2- Disagree; 3- No effect; 4- Agree; 5- Strongly agree)

As shown in Table 7.10, the analysis reveals that the small business is an important means of generating income for the owner-manager. This finding reveals that 71.7% agree that the business is their primary source of income (mean-3.8), which concurs with the findings of this study on the employment status of the owner-manager, that the majority of the respondents are engaged full time in business. The majority of the respondents, 80.8%, agree that their business is independently owned (mean- 4.19), which further explains the business ownership structure that the majority of the businesses are independently owned (sole proprietorship).

In addition, the results show that risk taking, with a mean of 3.65, is another important characteristic of their business. 63.1% of the respondents agree that their business involves constant risk taking and this analysis supports Timmons et al (1985) and Begley and Boyd (1987) that most business owners who want to be successful take calculated

risks, which in turn reduce the probability of failure (Krauss et al, 2005). A positive orientation towards risk taking is mandatory in a business environment like Nigeria where risk is inevitable. 77.3% of the respondents agree that their business involves creativity and innovation. The characteristics of a business are influenced by the personality characteristics of the entrepreneur (Carland et al, 2007). Creativity is also regarded as a business characteristic when an entrepreneur exploits the value of ideas (Mambula and Sawyer, 2004;). The validity of risk taking as an entrepreneurial characteristic is asserted in the establishment of the business (Mueller and Thomas, 2001).

#### 7.3.2.5 Length of time business has had telephones

Table 7.11 below presents the length of time the small businesses has had telephones.

Table 7.11: Length of time the small businesses has had telephones

Categories	Frequency	Percent
0-3 years	92	46.5
4-6 years	61	30.8
7-10 years	45	22.7
Total	125	100

Source: Field survey, 2011

All the small business surveyed in this study had a telephone and used it for business purposes, which is also one of the criterion in choosing the business for the study. As shown in Table 7.11, 46.5% of the small businesses have had telephones for less than three years, 30.8% have had telephones between four and six years, and 22.7% have had telephones between seven and ten years. The analysis of the distribution on the length of time the businesses have had telephones reveals that the majority of the respondents acquired a telephone after the liberalisation of the telecom sector in Nigeria in 1999. This analysis is in line with Adomi (2005) that small businesses in Nigeria benefited immensely from the liberalisation of the telecommunications sector which led to increased

access to telephone lines as compared to the time when only wealthy Nigerians could afford telephone lines.

In summary, this section gives an overview of the general characteristics of the respondents. Studies such as Donner (2006) have targeted the link between business owners' demographic characteristics and small business performance by providing general information on demographic factors such as age, gender and educational background and the use of telephony services. This study's demographic characteristics relating to age and gender contexts, wherein 50% of the male respondents were between the age of 31 and 40 years, is in line with the results of Donner (2006), who found that 69% of the respondents were male and with a median age of 32. These segments represent the main characteristics of the small business owner-managers; as they are seen to be physically fit for the survival of the business (Teo and Pok, 2003). In particular, this analysis supports Chogi (2007) who found that the owner-managers of the small businesses using telephony for their business (at 76.8%) had secondary education and above and noted that the higher the level of education the more the owner-manager could take advantage of different business changes.

## 7.4 Descriptive Statistics and Research Findings relating to Telecommunications, Entrepreneurship and Small Business Development

In order to answer the research objectives and hypotheses that were derived from the conceptual framework and research model of this thesis presented in Chapter Five, in this section the measurement variables that relate to the small business and its development are analysed using descriptive statistics.

### 7.4.1 Reason for Small Business Creation

Table 7.12 below presents the reasons for creating small businesses.

Table 7.12: Reasons for Creating Small Businesses

Categories	Frequency	Percent
Survival purpose	88	44.4
Opportunity advantage	110	55.6
Total	198	100

Source: Field survey, 2011

As shown in Table 7.12, 44.4% of the small businesses were created for survival<sup>15</sup> purposes and 55.6% were created due to opportunity advantages<sup>16</sup>. The analysis of the distribution of the respondents' reasons for creating business show that majority of the respondents set up their business because of opportunity advantage. This finding may be attributed to the high number of small businesses used in this study that engaged in telecommunications services. The opportunity advantage for creating their business arose based on knowledge of and sensitivity to the market place. For example, most small businesses that engaged in telecommunications services started the business after the liberalisation of the telecommunications sector and took advantage of the opportunities

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<sup>15</sup> Survival purpose refers to the business activities established and operated primarily to sustain the livelihood of the owner.

<sup>16</sup> Opportunity advantage means the ability to discover and take advantage of new business opportunities that are commercially viable.

that arose by setting up businesses such as phone call centres and internet cafes (Pyramid research, 2009).

In particular, this result is in line with Shane and Venkataraman (2000) who determined that entrepreneurship involves the discovery and exploitation of profitable opportunities. In addition, the result regarding survival purposes may be attributed to the high unemployment rate (23.9%) in Nigeria (National Bureau of Statistics, 2010) and people have found alternative means of survival by setting up small businesses.

#### 7.4.2 Location of Business

Table 7.13 below presents the location of the small businesses.

Table 7.13: Location of Small Businesses

Region	Frequency	Percent
Urban area	120	60.6
Rural area	78	39.4
Total	198	100

Source: Field survey, 2011

As shown in Table 7.13, 60.6% of the small businesses used in this study were located in urban areas and 39.4% of the small businesses were located in rural areas. Location is considered important in this study of the changing role of telecommunications for small businesses in Nigeria as a consequence of the liberalisation of the telecommunications sector, because of cultural issues. This is supported by Burgess (2002) who found that different regions within a country have their own traditions and established behaviours of doing things which can affect the behaviour of small businesses and their mode of using telecommunications.

This result reveals that the nature of a residential area influences the perception of entrepreneurial opportunities, which is in line with the empirical findings of Global Entrepreneurship Monitor research (2005), that the business location influences the perception of entrepreneurial opportunities; that is owner-managers of small businesses located in urban areas are more likely to perceive opportunities than owner-managers of small businesses located in rural areas. In addition, this

finding supports the work of Storey (1994) that the location of a business can positively contribute to the performance of the business.

#### 7.4.3 Reasons influencing the choice of Business Location

Table 7.14 presents the reasons for choosing location of businesses below.

Table 7.14: Reasons for choosing location of businesses

Categories	Frequency	Urban Region	Rural region
Accessibility to communication and information infrastructure	120 (60.6%)	83 (69.2%)	37 (47.4%)
Accessibility to customers	163 (88.1%)	102 (85%)	61 (78.2%)
Availability of capital support for business	89 (44.9%)	60 (50%)	29 (37.1%)
Accessibility of labour force	55 (27.8%)	40 (33.3%)	15 (19.2%)
Cultural and Societal values of the business environment.	174 (72.7%)	102(85%)	72 (92.3%)

Source: Field survey, 2011

As presented in Table 7.14, the small businesses surveyed in this study located their business within the urban and rural regions for five main reasons; accessibility to communication and information infrastructure, accessibility to customers, availability of capital support for business, availability of labour force and cultural and societal values of the business environment. These results are discussed below.

##### 7.4.3.1 Accessibility to communication and information infrastructure

As presented in Table 7.14, the distribution shows over 60% of the owner-managers of the small businesses chose the location of their business based on the accessibility of communication and information infrastructure. The availability of an infrastructure<sup>17</sup> is an important

<sup>17</sup> This is defined as public service and production facilities, including a wide range of public facilities and equipment required to provide social services and support private sector economic activity, namely: roads, bridges, water and sewer systems, airports, ports, public buildings, electric power production, fire safety, solid waste disposal and telecommunications (Moteff, Copeland and Fischer, 2003).

determinant of the location decision of a business (Graf and Mudambi, 2005). 69.2% and 47.4% of the small businesses were located within the urban and rural regions respectively, based on accessibility to communication and information infrastructure. This finding is in line with McNamara, (2000) who determined that access to and the effective use of communication and information infrastructure is a critical determinant of successful and sustainable development for business. The finding of this study supports Premkumar and Roberts (1999) that access to communication and information infrastructure can lead to economic benefits through more price competition, lower inventory costs, reduced business travel and new distribution channels without middlemen.

#### 7.4.3.2 Accessibility to customers

As presented in Table 7.14, the distribution shows that the majority of the owner-managers of the small businesses (at 82.3%) chose the location of their business based on its accessibility to customers. Furthermore, 85% and 78.2% of small businesses located within urban and rural regions respectively chose the location of their business based on access to customers. This finding suggests that access to customers is a crucial determinant of entrepreneurial performance and supports Chrisman et al. (2005) findings that a location that gives a business easy access to customers is more valuable than a location that does not.

#### 7.4.3.3 Availability of capital support for Business

As presented in Table 7.14, the distribution shows that over 44% of the owner-managers of the small businesses chose the location of their business based on the availability of capital support. Accordingly, 50% and 37.1% of the small businesses were located within the urban and rural regions respectively due to the availability of capital support. This finding is in line with Marson and Harrison (1993) who agreed that location in remote areas could influence the chance of securing finance. Institutional sources of finance, such as banks, will only gather

information on a small business venture to the extent that the marginal benefits from the information gathered equalise the marginal cost of acquiring it. This result supports the view of Felsenstein and Fleischer (2002) that the cost to the banks of acquiring information on small businesses located in a remote location (rural region) is likely to be mitigated against the small business receiving financial support.

#### 7.4.3.4 Accessibility of labour force

As presented in Table 7.14, the distribution shows about 28% of the owner-managers of the small businesses chose the location of their businesses based for the accessibility of labour force. 33.3% and 19.2% of the small businesses were located within urban and rural regions respectively based on the accessibility of labour force. This result support studies on developing countries conducted by Mead and Liedholm (1998); Cling et al., (2007) which state that accessibility of labour is not a priority when deciding on the location of the business as the labour force of a small business consists of the owner-manager, less than 10 employees, trainees and apprentices.

#### 7.4.3.5 Cultural and Societal Values

As presented in Table 7.14, the distribution shows about 72.7% of the owner-managers of the small businesses considered the cultural and societal values in locating their business. This result supports Carson et al. (1995) who stated that the entrepreneurial process of small businesses is influenced by the existence of the cultural and societal values within which the businesses are located. Furthermore, 85% and 92.3% of the small businesses located within the urban and rural regions considered cultural and societal values in locating their business. This finding supports (Phillipson et al, 2006) that a unique feature of localised networks of firms is their embeddedness<sup>18</sup> in a setting that accommodates cultural and

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<sup>18</sup> This is a process that involves developing credibility and acquiring knowledge of how business is conducted (Jack and Anderson, 2002).

social values; as they play an important role in encouraging local entrepreneurial capabilities (Jack and Anderson, 2002).

#### 7.4.4 Small Business and Networking

This subsection presents the results on the respondents' perception on the influence of increased access to telecommunication since the liberalisation of the telecommunications sector on business networking and the influence of networking on small business development. The results are presented below.

##### 7.4.4.1 Influence of Increased access to Telephony on Small Business Networking

Table 7.15 presents the perception of respondents on the influence of increased access to telephony on small business networking

Table 7.15: Perception of Respondents on Impact of increased access to Telephony on Small Business networking

Categories	Frequency	Percent
Yes	188	94.9
No	10	5.1
Total	198	100

Source: Field survey, 2011

As presented in Table 7.15, the analysis of the respondents' perception on the influence of increased access to telephony in Nigeria on small businesses shows 94.9% of the respondents stated that increased access to telephony has influenced their business networking compared to 5.1% of the respondents who disagreed. This result supports the view of Bogdanowicz (1997), Hankansson and Snehota (2007) and Castell (2011) that telephony (telecommunications) being an element of a network generates its own specific network effects and induces behaviour that generates remarkable changes in a business. In addition, this finding is in

line with Hayashi and Kurisaki (1992) and Li and Whalley (2002) that the liberalisation of telecommunications sector brings opportunities to new market entrants and established businesses, while creating opportunities for business expansion through networking.

#### 7.4.4.2 Influence of Networks on Small Businesses

Table 7.16 presents the perception of respondents on influence of networking on small business

Table 7.16: Perception of Respondents on influence of Networking on Small Businesses

Categories	Mean	S.D	1	2	3	4	5
It helped at the start-up stage of my business	3.62	1.25	19 (9.6%)	18 (9.1%)	37 (18.7%)	69 (34.8%)	55 (27.8%)
It helps in gaining access to business information and advice	4.35	0.85	0 (0%)	14 (7.1%)	6 (3.0%)	74 (37.4%)	104 (52.5%)
It helps to connect with distributors/ suppliers/ competitors	4.36	0.72	0 (0%)	6 (3.0%)	11 (5.6%)	86 (43.4%)	95 (48.0%)
It helps in increasing my business sales	4.14	0.96	3 (1.5%)	13 (6.6%)	22 (11.1%)	75 (37.9%)	85 (42.9%)

Source: Field Survey, 2011

Notes: S.D- Standard deviation

(1- Strongly disagree; 2- Disagree; 3- No effect; 4- Agree; 5- Strongly agree)

As presented in Table 7.16, analysis of the perception of the respondents shows that the majority (62.6%) of the respondents, with a mean of 3.62, agree that networks have a positive effect at the start-up stage of their business. Networks are key at the start-up stage of a business, as they help identify new and pre-existing contacts that will provide critical resources to begin the business, particularly family, friends and existing business contacts (Hoang and Antoncic, 2003; Drakopoulou-Dodd, Jack and Anderson, 2006).

This finding supports the work of Moller and Halinen (1999) which determined that networks allow family and friends to support small businesses during the start-up phase through unpaid work from family members that helps to compensate for financial limitations.

The analysis of the perception of the respondents, as shown in Table 7.16, reveals that majority (89.9%) of the respondents with a mean of 4.35, agree that networks have helped their business in gaining access to business information and advice. A key advantage of networks for the entrepreneurial process is the access they provide to information and advice (Drakopoulou-Dodd, Jack and Anderson, 2006). Access to information is considered to be critical for entrepreneurs; and a network is important because it provides owner-managers of small businesses with access to necessary information (Jenssen and Koenig, 2002). This finding supports Jack (2005) who stated that networks, such as friends of friends and group obligations, provide privileged information and advice relating to business opportunities.

As presented in Table 7.16, analysis of the perception of the respondents shows that the majority (91.4%) of the respondents, with a mean of 4.36, agree that networks have helped their business to connect with distributors, suppliers and competitors. This finding supports McGrath and O'Toole (2010) that the influence of networks is crucial to business as it helps in facilitating their interconnected relationship with distributors, suppliers and competitors and benefits their survival and business performance.

The analysis of the perception of the respondents as presented in Table 7.16 reveals that the majority (at 80.8%), with a mean of 4.14, agree that the influence of networks in their business help in increasing their business sales. This finding is in line with Street and Cameron (2007) that sales are an important element of success in all businesses; and networking activities such as collaborating with foreign partners could lead to an increase in sales and market share. This finding, as noted by Birley (1985), suggests that networks are important in the entrepreneurial

process in gathering information and generating opportunities that affect the performance of the business through increased business sales.

In particular, this result is in line with the view of Tsai (2001) and Drakopoulou-Dodd, Jack and Anderson (2006) who found that networks are an important part of the entrepreneurial process, in which business units discover new opportunities and acquire new knowledge through interaction with one another. Furthermore, this finding supports Uzzi (1996) and Evers and Knight (2008) that the influence of networks on small businesses has become a growing repository of information on the initiation of the entrepreneurial process; for sharing and/or mutual learning and exchange among other businesses (Galaskiewicz et al, 1985; Tsai, 2001), and the gathering of information on market conditions and opportunities (Bruderl and Preisendorfer, 1998; Hoang and Antoncic, 2003).

#### 7.4.5 Entrepreneurial activities of Small Businesses

This subsection presents the results on the entrepreneurial activities of small businesses surveyed in this study. Small businesses engage in entrepreneurial/ innovative activities such as introduction of new products and/or services, the introduction of new business strategies and the opening of new business branches. One of the characteristics of small businesses entails an increased ability to respond to changing environmental needs. Small businesses become more innovative over time as they develop more awareness of environmental and technological changes or innovative solutions (Hausmann and Rodrik, 2003). As discussed in Chapter three, many small businesses responded in line with the changes in the telecommunications sector for survival, growth and development as a consequence of the 1999 liberalisation of the Nigerian telecommunications sector. While the majority of small businesses could not afford to take up telecommunication services immediately after the liberalisation of the telecom sector due to the high cost of telephony and its services, it was the competitiveness among service providers that led

to the fall in the price of telephony and its services in 2003, in terms of lower tariffs through per second billing (NCC, 2005).

Innovative and technological information is the key element on which the systematic modernisation of small businesses is based (Julien, 1995). The objective of studying entrepreneurial/innovative activities in small businesses is to find the relative significance of the liberalisation of the telecommunications sector in Nigeria, from the perspective of small businesses and not to compare the relative importance of the innovative activities to each other. If a small business has had a positive experience (benefited) as a result of responding to environmental or technological changes, such as the liberalisation of the telecommunications sector, then the competitive performance of the small business would be improved, leading to increased business performance (La Rovere, 1998). The results are presented below.

#### 7.4.5.1 Introduction of New Products and Services

Table 7.17 below presents the perception of respondents in introducing new products and services, based on increased access to telephony.

Table 7.17: Perception of respondents in introducing new products and Services based on increased access to telephony

Categories	Frequency	Percent
Yes	114	57.6
No	84	42.4
Total	198	100

Source: Field survey, 2011

As presented in Table 7.17, the analysis shows that the majority of the respondents (57.6%) introduced new products or services into the market as a result of increased access to telephony. Researchers such as Chaganti and Chaganti, (1983), Varadarajan (1986) and Nonaka and stated that the key to survival, growth and profitability is the continuous

development of new products and services. This finding suggests that increased access to telephony, in relation to introduction of new products, had a positive effect on small businesses in Nigeria. This result, as noted by Hartman et al (1994), explains that the liberalisation of the Nigerian telecommunications sector has brought about increased access to information (idea sources) to small businesses which is a fundamental input to the overall innovative process of introducing new products or services.

Some of the respondents gave details of specific products and/ or services they had introduced, which are related to the type of business they engage in, however, the products and/ or services common to all the respondents and related to increased access to telecommunications include; the introduction of online shop, introducing applications that can be used for shopping on mobile devices, discounts for online purchases and data entry and analysis for research purposes. This result suggests that increased access to telephony has enabled small businesses to carry out entrepreneurial activities which are significant for their survival and development.

#### 7.4.5.2 Introduction of New Business Strategy

Table 7.18 below presents the perception of respondents in introducing new Business Strategy based on increased access to telephony.

Table 7.18: Perception of Respondents in introducing new Business Strategy based on increased access to telephony

Categories	Frequency	Percent
Yes	156	78.8
No	42	21.2
Total	198	100

Source: Field survey, 2011

As presented in Table 7.18, analysis shows that the majority of respondents (78.8%) introduced new strategies for their businesses as a result of increased access to telephony, while 21.2% of the respondents did not introduce any new business strategies. The business strategies common to all the respondents include distribution, marketing and communication, and a few mentioned purchasing and financial assistance. This finding is in line with Kaplan and Norton (2001) and Teece (2009) who concluded that small businesses must constantly come up with new strategies for the promotion and distribution of its products or services to remain competitive.

This result is in line with the view of Hitt et al (2001), and Jones, Hecker and Holland (2003) that the increased access to telephony in Nigeria, in relation to introduction of new business strategy, has had a positive effect on small businesses in Nigeria. Thus, the liberalisation of the telecommunications sector in Nigeria has had an influence on business networks which is important in providing small businesses with access to information, markets and resources, while also providing valuable opportunities for learning about and introducing new strategies for better business performance.

#### 7.4.5.3 Opening of New Branch

Table 7.19 presents the perception of respondents on the opening of new branches based on increased access to telephony below.

Table 7.19: Perception of Respondents on the opening of new branches based on increased access to telephony

Categories	Frequency	Percent
Yes	60	30.3
No	138	69.7
Total	198	100

Source: Field survey, 2011

From Table 7.19, it is evident that the majority of the respondents (about 69.7%) did not open a new branch in another part of the city or country as a result of increased access to telephony. This finding suggests that increased access to telephony has little or no significant effect on small businesses with regards to opening new branches. This finding is in line with the findings of Felsenstein and Fleischer (2002), who found that about 90% of the small businesses located in rural regions did not open a new branch as their location might be a hindrance in securing the necessary financial support.

#### 7.4.6 Small Business Performance

This subsection presents the performance results of the small businesses surveyed in this thesis since the liberalisation of the telecommunications sector. As stated in Chapter Five, this study has used profitability<sup>19</sup> and competitive advantage<sup>20</sup> to measure the level of performance of the small business. As discussed in Chapter Five, competitive advantage was chosen in this study to measure business performance because, according to Thong and Yap (1995, p. 432), telecommunications provides “opportunity for businesses to improve their efficiency and effectiveness to gain competitive advantage”, while profitability was chosen because one of the determinants of business performance in developing countries is profitability (Reardon et al., 1998). The perception of the respondents in terms of competitive advantage and profitability since the liberalisation of the telecommunications sector are presented below.

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<sup>19</sup> This refers to the improved financial performance on the pre-tax profits of the small businesses (Walker and Brown, 2004).

<sup>20</sup> This involves small businesses making use of a value creating strategy such as marketing, new product development, technology and process, which has not been previously adopted by current or potential competitors (Freel, 2000).

#### 7.4.6.1 Competitive Advantage and Small Business Performance

Below, Table 7.20 presents the perception of respondents on the competitive advantage of the small business.

Table 7.20: Perception of respondents on the Competitive advantage of the Small Business

Categories	Frequency	Percent
Same	24	12.1
Increased	174	87.9
Total	125	100

Source: Field survey, 2011

As presented in Table 7.20, analysis of the perception of the respondents on competitive advantage as a performance measure of their businesses, determines that none of the businesses in this study recorded a decline in terms of competitive advantage. The result shows that the majority of respondents (87.9%) stated that their businesses have improved in terms of competitive advantage, while 12.1% of the respondents stated their businesses remained the same in terms of competitive advantage since the liberalisation of the telecommunications sector. This finding is in line with Baird, Lyles and Orris (1994), who found that small businesses implementing value creating strategies may have an enhanced competitive advantage. In particular, this finding is in support of that of Qureshil et al. (2009) that enhanced competitive advantage allows businesses to create new jobs, increase productivity and sales through access to new markets and administrative efficiencies.

This finding suggests that the liberalisation of the telecommunications sector in Nigeria has enhanced small business performance through competitive advantage by increasing productivity and sales, as well as allowing access to new markets. This result is in line with the view of Afullo (2000) that the liberalisation of the telecommunications sector enhances competitive advantage by improving efficiency, lowering costs and providing extra services.

#### 7.4.6.2 Profitability and Small Business Performance

Table 7.21 below presents the perception of respondents on the profitability of small businesses.

Table 7.21: Perception of respondents on the Profitability of Small Businesses

Categories	Frequency	Percent
No significant change	47	23.7
Better	151	76.3
Total	198	100

Source: Field survey, 2011

As shown in Table 7.21, analysis of the perception of the respondents on profitability as a performance measure of their businesses show that none of the businesses in this study recorded a decline in terms of profitability. The result shows that the majority of the respondents (76.3%) responded that their business have performed better in terms of profitability since the liberalisation of the telecommunications sector, while 23.7% of the respondents stated there was no significant change in their business profit.

This finding is in line with that of Chu et al (2008) that enhanced profitability is a critical factor defining the success of small businesses in developing countries. Thus, increased access to telephony has created opportunities for small business creation as a reason for survival and opportunity advantage.

In summary, this section has provided explanations towards the development of the conceptual framework of this study. The overall result on the analysis of this section reveals that the entrepreneurial process, combined with infrastructural facilities, particularly telephony, is fundamental for small business development in Nigeria.

## 7.5 Descriptive Statistics and Research Findings relating to Telecommunications, Small Business Performance and Regional Development

The aim of this research as stated in Chapter One and at the beginning of this chapter is to investigate how owner-managers of small businesses in Nigeria perceive the effect of increased access and use of telephony on business performance and its potential in enhancing the capability of the small business to contribute to the regional development of the business location. This is to be achieved using a sample of data from small businesses located within urban and rural areas in Nigeria based on the developed conceptual framework.

In this section, analysis examines the resulting measures used for the four variables relating to telecommunications and small businesses. These variables were derived from the conceptual framework developed in Figure 5.1 of Chapter Five. Analysis of these variables will present findings that relate to increased access to telephony, uses of telephony (telecommunications), the impact of using telephony in business processes and the growth outcomes of small businesses having increased access to and use of telephony. Each of these variables are analysed in three parts: a general descriptive analysis of the whole sample, a test of differences between urban and rural areas and an analysis of the overall sample.

The general descriptive analysis uses frequency to provide a general perception of the respondents relating to the variables examined; the test of differences uses an independent sample t-test and a Mann-Whitney U test and is performed to determine if there are differences in the respondents' perception of the examined variables based on their location. The rationale for differentiating between urban and rural areas is to evaluate to what extent small businesses have increased access to telephony and to examine the use of telephony by small businesses in different regions in Nigeria as a result of the liberalisation. Moreover, analysis of the overall sample, using a one sample t-test and how it performs is also conducted in order to make an empirical conclusion on

the overall perception of the respondents based on the examined variables.

This section begins with the analysis and findings of indicators related to increased access to telephony as a consequence of the liberalisation of the telecommunications sector in Nigeria. These are the indicators that help small businesses determine the extent of their increased access to telephony. It also presents and analyses indicators that relate to the extent of telephony use by small businesses. These are indicators that inform how telephony is utilised by small businesses. In addition, this section presents and analyses indicators that relate to the impact of using telephony in business processes. These are indicators that help small businesses determine the extent to which the use of telephony has facilitated their business process. Finally, this section presents and analyses indicators that relate to the growth outcomes of small businesses having increased access to and use of telephony . These are indicators that present the extent of the overall effect of having and using telephony in small businesses.

Fundamentally, this section aims to test one of the research hypotheses stated in Chapter Five which is presented below:

H<sub>1</sub>: The integration of telephony into business processes will depend on the extent of increased access to and use of telephony by small business owner-managers in Nigeria from which three sub-hypotheses are developed:

- H<sub>1a</sub>: The extent of increased access to telephony for small businesses varies between rural and urban areas in Nigeria
- H<sub>1b</sub>: The extent of the effect of using telephony in business processes varies between rural and urban areas in Nigeria
- H<sub>1c</sub>: The extent of growth outcomes of increased access to and use of telephony by small businesses varies between rural and urban areas in Nigeria

## 7.5.1 Analysis of Respondents' perceptions relating to increased access to telephony

### 7.5.1.1 General Description of Increased access to Telephony

Below, Table 7.22 presents the results on increased access to telephony.

Table 7.22: Increased access to Telephony

Increased access to Telephony	N	Minimum	Maximum	Mean	S.D
It is easy to acquire a telephone	198	1	5	4.00	1.31
Telephone signals are always available	198	1	5	3.92	1.15
The price of telephony and its services are affordable	198	1	5	3.95	1.02
Most of the people you do business with have access and use telephones	198	1	5	4.06	1.16
Other telecommunications services (internet, fax) are readily available and affordable	198	1	5	3.87	1.26

Source: Field survey, 2011

Notes: S.D: Standard deviation; A five point likert scale has been used: 1: Strongly disagree and 5 Strongly agree

Table 7.22 presents the results on increased access to telephony in Nigeria. A five point scale (1- strongly disagree and 5 - strongly agree) was used to measure these responses. The perception of the respondents shows that it is easy to acquire a telephone (mean score 4); that telephone signals are always available (mean score 3.92); and that the price of telephony and its services is affordable (mean score 3.95). The perception of the respondents also shows that the majority of people they do business with have access and use telephones (mean score 4.06); and that other telecommunications services (internet and fax) are readily available and affordable (mean score 3.67).

This finding suggests that the easy acquisition of telephones by small businesses is a consequence of the liberalisation of the telecom sector in Nigeria. The direct benefit of easily acquiring a telephone to small businesses is immediate access to information and networks necessary for business, while the indirect benefit involves immediate business opportunities (Lea et al., 2006). In particular, this finding supports Adom-

Mensah (2006), that the liberalisation of the telecommunications sector is to enhance the quality of telecommunications services; and a liberalised telecommunications market structure ensures prices are much closer to marginal cost (Afullo, 2000).

Furthermore, this finding is in line with that of Olatokun (2009) that access to telecommunications devices, such as telephony, is in terms of ownership. Thus, these results are line with the view of Oestmann (2003) that small businesses have increased access to telephony which is an important aspect of the liberalisation of the telecommunications sector and improves universal access for everybody.

#### 7.5.1.2 Test of differences on increased access to Telephony between urban and rural areas

Table 7.23 below presents data concerning increased access to telephony in urban and rural areas in Nigeria.

Table 7.23: Increased access to Telephony in Urban and Rural areas

Increased access to telephony	Mean Scores		T-test	Mann-Whitney U Test
	Urban	Rural		
It is easy to acquire a telephone	4.21	3.68	3.05***	-3.27***
Telephone signals are always available	4.09	3.67	2.50**	-2.43**
The price of telephony and its services are affordable	4.14	3.67	3.46***	-3.75***
Most of the people you do business with have access and use telephones	4.25	3.77	2.14**	-2.07**
Other telecommunications services (internet, fax) are readily available and affordable	4.13	3.47	3.95***	-4.12***

Source: Field survey, 2011

Notes: \*\*\*Significant at 1%; \*\*Significant at 5%; \*Significant at 10%.

Table 7.23 presents the results for the increased access to telephony between urban and rural areas in Nigeria. The results show that the perception of respondents in urban areas on increased access to

telephony is significantly different from the respondents' perception in rural areas. It is evidenced from Table 7.23 that for all the indicators tested the computed values of the t-test statistics show that statistical significant differences exist between urban and rural areas relating to increased access to telephony. This is further confirmed by the statistical significant differences under the Mann-Whitney U test conducted.

In order to ascertain the direction of the differences, a cross tabulation was conducted and is presented in Table 7.24 below.

Table 7.24: Cross tabulation results on increased access to telephony between urban and rural areas in Nigeria

It is easy to acquire a telephone						$\chi^2$
	1	2	3	4	5	4.75***
Urban area	6.7%	10%	2.5%	17.5%	63.3%	
Rural area	10.3%	10.3%	14.1%	32.1%	33.3%	
Telephone signals are always available						
	1	2	3	4	5	3.71***
Urban area	1.7%	12.5%	5.0%	36.7%	44.2%	
Rural area	6.4%	15.4%	12.8%	35.9%	29.5%	
The price of telephony and its services is affordable						
	1	2	3	4	5	3.62***
Urban area	0%	8.3%	14.2%	32.5%	45%	
Rural area	5.1%	11.5%	14.1%	50%	19.2%	
Most of the people you do business with have access and use telephones						
	1	2	3	4	5	3.94***
Urban area	1.7%	10%	9.2%	20%	59.2%	
Rural area	7.7%	10.3%	12.8%	35.9%	33.3%	
Other telecommunications services (internet, fax) are readily available and affordable						
	1	2	3	4	5	3.81***
Urban area	1.7%	13.3%	8.3%	24.2%	52.5%	
Rural area	10.3%	17.9%	15.4%	26.9%	29.5%	

Notes: (1 - Strongly disagree; 2 - Disagree; 3 - No effect; 4 - Agree; 5 - Strongly agree)

$\chi^2$  = Chi-square; \*\*\*Significant at 1%; \*\*Significant at 5%; \*Significant at 10%.

As presented in Table 7.24, the cross tabulation results concerning increased access to telephony in Nigeria show that the differences relate to the extent of the respondents' agreement on each of the indicators between the two locations. Analysis shows that in urban areas 80.8% of respondents in urban areas agree that it is easy to acquire a telephone, while 65.4% in rural areas agree that it is easy to acquire a telephone; t

and 80.9% in urban areas agree that telephone signals are always available. In rural areas 65.4% of respondents in rural areas agree that telephone signals are always available. 77.5% in urban areas agree that the price of telephony services is affordable, while 69.2% in rural areas agree that the price of telephony services is affordable. 79.2% in urban areas agree that the majority of people they do business with have access and use telephones, while 69.2% in rural areas agree that most of the people they do business with have access and use telephones. Finally, the results reveal that 76.7% of respondents in urban areas agree that other telecommunications services (internet, fax) are readily available and affordable, while 56.4% of the respondents in rural areas agree that other telecommunications services (internet, fax) are readily available and affordable.

Analysis of the chi-square test for all the indicators of increased access to telephony in Nigeria is statistically significant at 1%. These results suggest that the extent of increased access to telephony for small businesses varies between urban and rural areas. This finding is in line with Hindman (2000) who determined that small businesses in rural areas are at a disadvantage in having equal access to telecommunications with their counterparts in urban areas, because of structural barriers posed by geographic isolation.

In addition, this finding supports Gilliespie, Coombes and Raybould (1994) that the disparities between urban and rural areas on increased access to telecommunications for small businesses lie partly in the differentiated ability of the telecommunications operators to invest in up-grading their networks. Hence, the hypothesis  $H_{1a}$  is supported.

7.5.1.3 Description of respondents' perception on increased access to telephony in urban and rural areas in Nigeria

As stated earlier, this subsection conducts a one sample t-test on the overall perception of the respondents based on their locations with a view of making an empirical conclusion on increased access to telephony as a consequence of the liberalisation of the telecommunications sector in Nigeria. This study takes a test value of 3 which represents the no-effect position given in the question (between 1- strongly disagree and 5- strongly agree) in order to determine the effect of liberalisation of the telecommunications sector for small businesses in each region. A description of the respondents' perception on increased access to telephony in urban and rural areas is presented in Table 7.25 below.

Table 7.25: Description of respondents' perception on increased access to telephony in urban and rural areas in Nigeria

Increased access to Telephony	Test Value- 3	
	Mean Scores	
	Urban	Rural
It is easy to acquire a telephone	4.21***	3.68***
Telephone signals are always available	4.09***	3.67***
The price of telephony and its services are affordable	4.14***	3.67***
Most of the people you do business with have access and use telephones	4.25***	3.77***
Other telecommunications services (internet, fax) are readily available and affordable	4.13***	3.47***

Source: Field survey, 2011

Note: \*\*\*Significant at 1%; \*\*Significant at 5%; \*Significant at 10%.

As presented in Table 7.25, the computed mean values for all the indicators of increased access to telephony in Nigeria, both in urban and rural areas, are greater than the test value and are statistically significant at 1%. This finding implies that increased access to telephony is a consequence of the liberalisation of the telecommunication sector in Nigeria; thus this study suggests that irrespective of location, small

businesses have had increased access to telephony as a result of the recent liberalisation of the telecommunications sector in Nigeria.

Although, and as indicated earlier, there are differences in the responses for both urban and rural areas, the impact of liberalisation of the telecommunications sector in Nigeria is the same.

#### 7.5.1.4 Description of respondents' perception on regional development of business location relating to increased access to Telephony in Nigeria

Below, Table 7.26 presents the results on regional development of business location relating to increased access to telephony in Nigeria.

Table 7.26: Regional Development of business location relating to increased access to telephony in Nigeria

Categories	Frequency	Percent
Yes	178	89.9
No	20	10.1
Total	198	100

Source: Field survey, 2011

As presented in Table 7.26, analysis shows that the majority of respondents (89.9%) believed that as a result of the liberalisation of the telecommunications sector in Nigeria, increased access to telephony has contributed to the development of their local area. This finding supports the analysis of Table 7.25 which determined that irrespective of location, small businesses have had increased access to telephony in Nigeria. This is in line with the view of Duncombe and Heeks (2005) that access to telecommunications in developing countries is important for the emerging contribution of information-related activities to employment, income generation and poverty reduction.

## 7.5.2 Analysis of Respondents' perception relating to the use of telephony by Small Businesses in Nigeria

### 7.5.2.1 General description of uses of telephony by small businesses

Table 7.27 below presents results on the use of telephony by small businesses.

Table 7.27: Uses of telephony by Small Businesses in Nigeria

Uses of telephony by small businesses	N	Minimum	Maximum	Mean	S.D
You use telephony to stay in touch with customers and suppliers	198	2	5	4.37	0.761
You use telephony regularly for business transactions	198	2	5	4.36	0.824
The easiest way for customers to contact you is by telephone	198	1	5	4.14	1.013
The use of telephony has helped you gain access to more business partners	198	2	5	4.12	0.891
The use of telephony has helped you in knowledge sharing	198	1	5	4.01	0.992
The use of telephony has increased the support you get from family or friends	198	1	5	3.95	1.036
You find it difficult transacting business with someone who does not use, or have access to a telephone	198	1	5	3.85	1.001
The use of the telephone has increased the time spent networking with your business partners	198	1	5	3.84	1.078

Source: Field survey, 2011

Notes: S.D: Standard deviation; A five point likert scale has been used -1: Strongly disagree and 5: Strongly agree

\*\*\*Significant at 1%; \*\*Significant at 5%; \*Significant at 10%.

Table 7.27 presents the results on the use of telephony by small businesses in Nigeria. A five point scale (1: strongly disagree and 5: strongly agree) was used in measuring these responses. The findings relating to the distribution of use of telephony as presented in Table 7.27 row 1, reveal that the majority of small businesses owner-managers (mean score: 4.37), agree that they use telephony to stay in touch with

customers and suppliers. This finding supports Welch and Welch (1996) that the owner-managers of small businesses use telephony to network with the customers and suppliers in order to build mutually beneficial relationships. In addition, this finding is in line with Esselaar et al. (2006) that owner-managers of small businesses use telephony more to keep in contact with customer and clients than any other form of communication.

The finding relating to the distribution of use of telephony in Nigeria as presented in Table 7.27, row 2, reveal that the majority of owner-managers of small businesses (mean score: 4.36), agree that they use telephony regularly for business transactions. This finding supports the view of Gurstein (1999) that the owner-managers of small businesses use telephony to facilitate instant communication on purchase orders and the payments of goods and/ or services delivered.

The finding relating to the distribution of use of telephony in Nigeria as presented in Table 7.27, row 3, indicates that the majority of small business owner-managers (mean score: 4.14), agree that the easiest way for customers to contact them is by telephone. This finding supports the view of Chell and Baines (2000) that the owner-managers of the small businesses use the telephone in order to be readily available for business purposes.

The finding relating to the distribution of use of telephony in Nigeria as presented in Table 7.27, row 4; shows that the majority of the owner-managers of small businesses (mean score: 4.12), agree that the use of telephony has helped them gain access to more business partners. This finding is in line with that of Alteren (2011) that owner-managers of small businesses use telephony for networking in order to connect with people who are beneficial for their business development. In addition, this finding supports Donner (2006) that the use of information and communication technology leads to new, more specialised networks such as business partners that are less geographically defined.

The finding relating to the distribution of use of telephony in Nigeria as presented in Table 7.27, row 5; show that the majority of e small business

owner-managers (mean score: 4.01), agree that the use of telephony have helped them in knowledge sharing. This finding supports the view of Haggie and Kingston (2003) such that the owner-managers of small businesses in Nigeria use telephony to share applicable knowledge in carrying out business activities in a different way, with an employee or competitor within the same sector. In addition, this finding supports the claim of Chetty and Campbell-Hunt (2003) that small businesses use telephony to acquire and share knowledge through their networks such as suppliers, customers and distributors by exchanging information beneficial for business performance.

The finding relating to the distribution of use of telephony in Nigeria as presented in Table 7.27, row 6; shows that majority of the owner-managers of small businesses (mean scores-3.95), agree that the use of the telephone has increased the support received from friends and families. This finding supports Chell and Baines (2000) such that owner-managers of small businesses use the telephone to receive support from friends and families, by acquiring ideas that support the development of the business. In addition, this finding is in line with Anderson, Jack and Dodd (2005) that family and friends are seen as strong ties for small business. In particular, this finding supports the view of Elfring and Hulsink (2003) that family and friends support businesses by providing access to information on various topics ranging from potential markets for goods and services, innovations and new business practices for business success.

The finding relating to the distribution of use of telephony in Nigeria as presented in Table 7.27, row 7; shows that the majority of the owner-managers of small businesses (mean score-3.85), agree that they find it difficult to transact business with someone who does not use, or have access to telephone. In particular, this finding is in line with the view of Donner (2006) that the owner-managers of small businesses realise the benefits of using telephony in transacting business in meeting the priority needs of the business and are unwilling to undertake the difficult

transaction process of doing business with a customer that cannot be easily reached.

The finding relating to the distribution of use of telephony in Nigeria as presented in Table 7.27, row 8 reveals that the majority of the owner-managers of small businesses (mean score: 3.84), agree that the use of telephony has increased the time spent networking with business partners. This finding is in line with Chetty and Campbell-Hunt (2003) wherein the owner-managers of small businesses use telephony to develop and maintain business networks that are significant to the development of the business, by spending a significant amount of time on the telephone.

Overall, these results support the belief of Jennex and Amoroso (2002) that the use of telecommunications is critical for the success of companies, especially small businesses in developing countries such as Nigeria. Furthermore, they are in line with the view of Donner (2006) that the relative appeal and usefulness of telephone meets the priority needs of small businesses.

7.5.2.2 Test of differences on use of telephony by small businesses in urban and rural areas in Nigeria

Table 7.28 presents the results of uses of telephony by small businesses in urban and rural areas below.

Table 7.28: Uses of telephony by small businesses in urban and rural areas in Nigeria

Uses of Telephony	Mean Scores		T-test	Mann-Whitney U Test
	Urban	Rural		
You use the telephone to stay in touch with customers and suppliers	4.38	4.35	0.34	-0.06
You use the telephone regularly for business transactions	4.41	4.29	0.94	-0.59
The easiest way for customers to contact you is through the telephone	4.15	4.13	0.14	-0.38
The use of the telephone has helped you gain access to more business partners	4.17	4.04	0.99	-0.93
The use of the telephone has helped you in knowledge sharing	4.08	3.91	1.14	-1.33
The use of the telephone has increased the support you get from family and friends	4.12	3.69	2.87***	-2.82***
You find it difficult transacting business with someone who does not use or have access to a telephone	3.93	3.73	1.34	-1.20
The use of the telephone has increased the time spent networking with your business partners	4.03	3.54	3.23***	-3.02***

Source: Field survey, 2011

Note: \*\*\*Significant at 1%; \*\*Significant at 5%; \*Significant at 10%.

Table 7.28 presents the results on the uses of telephony by small businesses in urban and rural areas in Nigeria. The results show that the perception of the respondents in urban areas on the use of telephony is not significantly different from the perception of the respondents in rural areas. It is evidenced from Table 7.28 that the computed values of the t-test statistics show that for most of the indicators tested no significant differences exist between the urban and rural areas. This is further

confirmed by the Mann-Whitney test conducted which determined there were no significant differences for most of the indicators. These results indicate that the use of telephony by small businesses is similar across different locations. This finding is in line with Malecki (2003) that small businesses in both urban and rural areas benefit from the use of telephony by obtaining a wide range of information rather than relying on limited resources. Moreover, it also provides small businesses with new means of transacting their business activities and exchanging and communicating new ideas.

However, two of the indicators (the use of the telephone has increased the time spent networking with your business partners; and the use of the telephone has increased the support you receive from family or friends), shows that significant differences exist between urban and rural areas.

In order to ascertain, the direction of the differences of these two indicators, a cross tabulation was conducted and is presented in Table 7.29 below.

Table 7.29: Cross Tabulation results on uses of telephony by small businesses in urban and rural areas in Nigeria

The use of the telephone has increased the time spent networking with your business partners						$\chi^2$
	1	2	3	4	5	9.967***
Urban area	6.7%	10%	2.5%	17.5%	63.3%	
Rural area	10.3%	10.3%	14.1%	32.1%	33.3%	
The use of the telephone has increased the support you get from family or friends						
	1	2	3	4	5	7.929***
Urban area	1.7%	12.5%	5.0%	36.7%	44.2%	
Rural area	6.4%	15.4%	12.8%	35.9%	29.5%	

Notes: (1- Strongly disagree; 2- Disagree; 3- No effect; 4- Agree; 5- Strongly agree)

$\chi^2$  = Chi-square; \*\*\*Significant at 1%; \*\*Significant at 5%; \*Significant at 10%.

As presented in Table 7.29, the cross tabulation results on the use of telephony show that the differences relate to the extent of the respondents' agreement on each of the indicators between the two

locations. Analysis shows that about 80.8% of the respondents in urban areas and approximately 65.4% of the respondents in rural areas agree that the use of the telephone has increased the time spent networking with their business partners. 80.9% of respondents in urban areas and 65.4% respondents in rural areas agree that the use of the telephone has increased the support they receive from family and friends.

Analysis of the chi-square test for the two indicators of the use of telephony is statistically significant at 1%. These results show that the use of telephony by small businesses in relation to these indicators varies between the different locations. This finding, relating to the differences between the perception of owner-managers of small businesses in urban areas and rural areas wherein the use of the telephone has increased the time spent networking with business partners, is in line with Grimes (2003) who determined that there are more specialised networks, such as business partners, in urban areas than in rural areas.

In addition, the finding relating to the differences between the perception of owner-managers of small businesses in urban areas and owner-managers of small businesses in rural areas wherein the use of the telephone has increased the support received from friends and families may be attributed to the location of the business. This supports Sawhney and Jayakar (2008) that small businesses in urban areas can access new business information more quickly than their counterparts in rural areas.

#### 7.5.2.3 Description of Respondents' perception on uses of telephony by small businesses in urban and rural areas in Nigeria

As stated earlier, this subsection conducts a one sample t-test on the overall perception of the respondents, based on their location, with a view to make an empirical conclusion on the use of telephony by small businesses. This study takes a test value of 3, which represents the no-effect position given in the question (between 1- strongly disagree and 5- strongly agree), in order to determine if increased access to telephony has

increased the ability of small businesses to link with new markets and business networks in each region.

Table 7.30 below presents the description of respondents on the use of telephony by small businesses in urban and rural areas.

Table 7.30: Description of respondents' perception on the use of telephony by small businesses in urban and rural areas in Nigeria

Uses of Telephony	Test Value- 3	
	Mean Scores	
	Urban	Rural
You use the telephone to stay in touch with customers and suppliers	4.38***	4.35***
You use the telephone regularly for business transactions	4.41***	4.29***
The easiest way for customers to contact you is through the telephone	4.15***	4.13***
The use of the telephone has helped you gain access to more business partners	4.17***	4.04***
The use of the telephone has helped you in knowledge sharing	4.08***	3.91***
The use of the telephone has increased the support you get from family or friends	4.12***	3.69***
You find it difficult transacting business with someone who does not use or have access to a telephone	3.93***	3.73***
The use of the telephone has increased the time spent networking with your business partners	4.03***	3.54***

Source: Field survey, 2011

Note: \*\*\*Significant at 1%; \*\*Significant at 5%; \*Significant at 10%.

As presented in Table 7.30, the computed mean values for all the indicators of uses of telephony both in urban and rural areas are greater than the test value and are statistically significant at 1%.

The finding presented in Table 7.30, row 1; shows that the owner-managers of the small businesses, irrespective of their business location, agree that they use the telephone to stay in touch with customers; this finding supports Esselar et al., (2006) that owner-mangers of small

businesses use the telephone more often than other forms of telecommunication services to keep in touch with their customers and suppliers.

The findings presented in Table 7.30, row 2; shows that that the owner-managers of the small businesses, irrespective of their business location, agree that they use the telephone regularly for business transactions; this finding supports Smith (1999) that the owner-managers of small businesses innovatively use the telephone to link with established and new markets in order to enhance their competitive advantage.

The findings presented in Table 7.30, row 3; shows that that the owner-managers of small businesses, irrespective of their business location, agree that the easiest way for customers to contact them is through the telephone; this finding is in line with Chell and Baines (2000) that the increased availability of the owner-managers may enhance their business performance.

The finding presented in Table 7.30, row 4, shows that the owner-managers of the small businesses, irrespective of their business location, agree that the use of the telephone has helped them gain access to more business partners; this finding may be because relevant business information are usually held by some privileged people and networking with these individuals will help the owner-manager of the small businesses to gain access to privileged information (Chetty and Campbell-Hunt, 2003).

The finding presented in Table 7.30, row 5 reveals that the owner-managers of the small businesses, irrespective of the business location, agree that the use of the telephone have helped them in knowledge sharing. This evidence supports that of Malecki and Tootle (1996) that owner-managers of small businesses are aware that knowledge is key to business success; hence they use the telephone to share knowledge in order to enhance their competitive advantage.

The finding presented in Table 7.30, row 6; shows that the owner-managers of the small businesses, irrespective of their business location,

agree that the use of the telephone has increased the support received from friends and families. This finding is in line with Elfring and Hulsink (2003) that the owner-managers of the small businesses rely on the telephone to keep in touch with family and friends who are able to provide related information on potential markets and innovative practices for the success of the business.

The finding presented in Table 7.30, row 7; shows that the owner-managers of the small businesses, irrespective of the business location, agree that they find it difficult to transact business with someone who does not use, or have access to telephone. This is in line with Kapurubandara and Lawson (2006) and may be attributed to economic, political and cultural circumstances wherein the person who does not use a telephone lacks awareness of the perceived benefits of its use.

The finding presented in Table 7.30, row 8 illustrates that the owner-managers of the small businesses, irrespective of the business location, agree that the use of the telephone has increased the time spent networking with business partners. This supports (Chell and Baines, 2000) that the owner-managers of small businesses are aware of the importance of maintaining relevant trading contacts to their business performance.

These results suggest that the uses of telephony have facilitated business networking among small businesses; therefore this study suggests that irrespective of location, increased access to telephony has increased the ability of small businesses in Nigeria to link with new markets and business networks.

### 7.5.3 Analysis of Respondents' perception on impact of using telephony in Small Business processes in Nigeria

#### 7.5.3.1 General description of influence of using telephony in business Processes in Nigeria

Table 7.31 below presents the results regarding the impact of using telephony in small business processes in Nigeria.

Table 7.31: Influence of using telephony in Small Business processes

	N	Minimum	Maximum	Mean	S.D
Influence of using telephony in Small Business Processes					
The ability to reduce operational costs	198	1	5	3.97	1.11
The ability to acquiring better market prices for your business	198	1	5	3.93	0.93
The ability to reduce the time it takes to make important business decisions	198	1	5	3.91	1.05
The use of the telephone helps you to save money by reducing the number of costly journeys for business purposes	198	1	5	3.91	1.30
The acquisition of new customers for your business	198	1	5	3.89	1.17
The ability to access more information on new products and their usefulness	198	1	5	3.81	1.20
Increase in sales and marketing strategy (telemarketing and advertising)	198	1	5	3.74	1.12
The risk involved in doing business has reduced since you started using a telephone	198	1	5	3.70	1.22

Source: Field survey, 2011

Notes: S.D: Standard deviation; A five point likert scale has been used -1: Strongly disagree and 5: Strongly agree

Table 7.31 presents the results on the influence of using telephony in small business processes in Nigeria. A five point scale (1- strongly disagree and 5 - strongly agree) was used in measuring these responses. The respondents' perception shows that the use of telephony in businesses processes influences their ability to reduce operational costs (mean score - 3.97) and the ability to acquire better market prices for

their business (mean score - 3.93). In addition, the respondents' perception also shows that the use of telephony in businesses processes influences the ability to reduce the time it takes to make important business decisions (mean score - 3.91); that the use of the telephone helps owners save money by reducing the number of costly journeys for business purposes (mean score - 3.91); and the acquisition of new customers for their business (mean scores - 3.89).

Furthermore, the respondents' perception of shows that the use of telephony in businesses processes in Nigeria influences the ability to access more information on new products and their usefulness (mean score - 3.81); affects their business by increasing sales and the implementation of marketing strategies (mean score - 3.74); and that the risk involved in doing business has reduced since they started using a telephone (mean score 3.70).

The finding presented in Table 7.31; row 1; shows that the majority of small business owner-managers agree that the use of the telephone influences their ability to reduce operational costs. Moreover, this is in line with Chetty and Campbell-Hunt (2003) wherein the owner-managers of small businesses use the telephone to obtain useful information such as how to acquire economical labour, cheap rent and where to buy business products or supplies cheap from business partners.

The findings presented in Table 7.31, row 2, show that the majority of small business owner-managers agree that the use of the telephone influences their ability to acquire better market prices for their business. This finding supports Reibstein (2002) that the owner-managers of small businesses need to offer their goods and services at a reasonable price in order to attract customers; hence they use the telephone to gather information on the prevailing market price of their goods and services.

The findings presented in Table 7.31; row 3 shows that the perception of the majority of the owner-managers of small businesses agree that the use of the telephone influences their ability to reduce the time it takes to make important business decisions. This finding is in line with Humprey et

al (1993), that owner-managers of small businesses are aware of the significance of business decisions and its implication on their business; hence the use of the telephone helps them to quickly obtain relevant information in order to take appropriate business decisions.

The findings presented in Table 7.31; row 4 show that the majority of small business owner-managers agree that the use of the telephone helps them to save money by reducing the number of costly journey for business purposes; and this supports the view of Lechner, Dowling and Welppe (2006) such that the owner-managers of small businesses use the telephone for organisational effectiveness, by contacting their suppliers to check for product availability.

The findings presented in Table 7.31 row 5 show that the majority of small business owner-managers agree that the use of the telephone influences the acquisition of new customers for their businesses. This is evidenced by Keh, Nguyen and Ng (2007) that the owner-managers of small businesses ensure their business offers quality product and services in order to maintain and increase their customer base. Hence, the use of the telephone helps them to update their customers on the progress of recent transactions, the availability of new products and services and to initiate business transactions with newly introduced customers, so as to enhance their business performance.

The findings presented in Table 7.31; row 6; show that the majority of small business owner-managers agree that the use of the telephone influences their ability to access more information on new products and their usefulness. This finding indicates that the owner-managers of the small businesses spend a significant amount of time networking with relevant business partners who have access to information on new products related to the small business (Chetty and Campbell-Hunt, 2003); and this supports the finding presented on the increase in the amount of time spent networking with business partners in Table 7.27, row 8.

The findings presented in Table 7.31, row 7, show that the majority of small business owner-managers agree that the use of the telephone

influences their marketing strategy and increases sales. This finding is in line with the thoughts of Ilavarasan and Levy (2012) such that the owner-managers of small businesses use the telephone as a tool to allow customers to contact them at any point in time for business purposes.

The findings presented in Table 7.31; row 8 illustrate that the perception of the majority of the owner-managers is that the use of the telephone influences the risk involved in doing business. This finding supports that of Julien and Lachance (2001) such that the owner-managers of small businesses use the telephone to gather information from their networks with regards to the uncertainties that operate within the business environment.

These results support Bharadwaj (2000) who noted that the influence of using telephony in the small business process creates business value. The findings in Table 7.31 are in line with those of Amrik, Sohal and Lionel (1998) that the influence of using telephony helps owner-managers to gather data and create information that is valuable in order to make quick and important decisions. In particular, these findings support the belief of Duncombe and Heeks (1999) that the effect of small businesses using telephony would facilitate the acquisition of new customers for the business, reduce the time it takes to make important business decisions, allow access to more information on new products, acquire better market prices, reduce risk, reduce operational costs and increase sales and the implementation of marketing strategies.

7.5.3.2 Test of differences on the influence of using telephony in Small Business processes in Urban and Rural areas in Nigeria

Table 7.32 below, presents the results on the influence of using telephony in small business processes in urban and rural areas in Nigeria.

Table 7.32: The influence of using telephony in small business processes in urban and rural areas in Nigeria

Influence of using telephony services in small business processes	Mean Scores		T-test	Mann-Whitney U Test
	Urban	Rural		
The ability to reduce operational costs	4.25	3.55	4.53***	-4.77***
The ability to acquire better market prices for your business	4.05	3.76	2.18**	-2.09**
The ability to reduce the time to make important business decisions	4.07	3.68	2.57**	-2.61**
The use of the telephone helps you save money by reducing the number of costly journeys for business purposes	4.32	3.48	5.89***	-4.25***
The acquisition of new customers for your business	4.10	3.58	3.12***	-3.394***
The ability to access more information on new products and their usefulness	4.05	3.45	3.62***	-3.39***
Increase in sales and marketing strategies (telemarketing and advertising)	4.00	3.63	4.26***	-3.47***
The risk involved in doing business has reduced since you started using a telephone	3.94	3.52	3.59***	-3.64***

Source: Field survey, 2011

\*\*\*Significant at 1%; \*\*Significant at 5%; \*Significant at 10%

Table 7.32 presents results on the influence of using telephony in small business processes in urban and rural areas in Nigeria. The results show that the perception of the respondents in urban areas on the influence of using telephony in small business processes is significantly different from the perception of those in rural areas. It is evidenced from the computed mean values of the t-test statistics that, for the all indicators tested, significant differences exist between urban and rural areas in the impact experienced from using telephony in business processes. This is further

confirmed by the all through statistical significant differences recorded by the Mann-Whitney U test conducted.

In order to ascertain the direction of the differences, a cross tabulation was conducted and is presented in Table 7.33 below.

Table 7.33: Cross Tabulation results on the influence of using telephony in Small Business processes in Urban and Rural areas in Nigeria

The ability to reduce operational cost						$\chi^2$
	1	2	3	4	5	
Urban area	4.2%	3.3%	6.7%	35.0%	50.8%	
Rural area	3.8%	16.7%	21.8%	35.9%	21.8%	
The ability to acquire better market prices for your business						4.66**
	1	2	3	4	5	
Urban area	0%	5.8%	20%	37.5%	36.7%	
Rural area	1.3%	10.3%	23.1%	42.3%	23.1%	
The ability of taking less time to make important business decisions						6.417**
	1	2	3	4	5	
Urban area	1.7%	8.3%	10%	41.7%	38.3%	
Rural area	5.1%	12.8%	12.8%	47.4%	21.8%	
The use of the telephone helps you to save money by reducing the number of costly journeys for business purposes						29.64***
	1	2	3	4	5	
Urban area	2.5%	2.5%	4.2%	42.5%	48.3%	
Rural area	21.8%	17.9%	2.6%	25.6%	32.1%	
The acquisition of new customers for your business						9.34***
	1	2	3	4	5	
Urban area	4.2%	9.2%	3.3%	39.2%	44.2%	
Rural area	7.7%	15.4%	11.5%	42.3%	23.1%	
The ability to access more information on new products and their usefulness						12.34***
	1	2	3	4	5	
Urban area	5.8%	0%	18.3%	35%	40.8%	
Rural area	14.1%	7.7%	21.8%	33.3%	23.1%	
Increase in sales and marketing strategy (telemarketing and advertising)						16.67***
	SD	D	N	A	SA	
Urban area	1.7%	2.5%	23.3%	39.2%	33.3%	
Rural area	12.8%	15.4%	15.4%	38.5%	17.9%	
The risk involved in doing business has reduced since you started using a telephone						12.15***
	1	2	3	4	5	
Urban area	4.2%	9.2%	16.7%	28.3%	41.7%	
Rural area	10.3%	19.2%	14.0%	41.0%	15.4%	

Notes:

(1- Strongly disagree; 2- Disagree; 3- No effect; 4- Agree; 5- Strongly agree);

$\chi^2$  = Chi-square; \*\*\*Significant at 1%; \*\*Significant at 5%; \*Significant at 10%.

As presented in Table 7.33, the cross tabulation results on the influence of using telephony in small business processes show that the differences relate to the extent of the respondents' agreement on each of the indicators between the two locations. Analysis indicates that 85.8% of the respondents in urban areas and only 57.7% of respondents in rural areas

agree that the ability to reduce operational costs has been affected; 74.2% of respondents in urban areas and 65.4% of those in rural areas agree that the ability to acquire better market prices for their business has been influenced; 80% of the urban respondents and 69.2% of the respondents in rural areas agree that the ability to reduce the time it takes to make important business decisions has been influenced.

In addition, analysis shows that 90.8% of the respondents in urban areas, but only 57.7% of the rural respondents agree that the use of the telephone helps them to save money by reducing the number of costly journeys for business purposes; 83.4% of the respondents in urban areas and 65.4% of the respondents in rural areas agree that the acquisition of new customers for their business has been affected; 75.8% of the respondents in urban areas and 56.4% of the respondents in rural areas agree that the ability to access more information on new products and their usefulness has been affected.

Furthermore, analysis indicates that 72.5% of the respondents in urban areas and 56.4% of the respondents in rural areas agree that sales and marketing strategies (telemarketing and advertising) have been influenced; while 70% of the respondents in urban areas and 56.4% of the respondents in rural areas agree that the risk involved in doing business has reduced since they started using a telephone.

Analysis of the chi-square test presented in Table 7.33 shows that the indicators relating to the extent of the impact of using telephony in business processes are statistically significant at 1% and 5%. These results illustrate that the extent of the impact of using telephony in small business processes varies between urban and rural areas.

Fundamentally, this finding shows that the extent of the influence of using telephony in small business processes in Nigeria is higher for small businesses located in urban areas than those in rural areas. These findings may be attributed to different reasons associated with the location of the small business. Moreover, this is supported by the work of Grimes (2003) who determined that rural small businesses travel more

than their counterparts in urban areas, in order to make bulk purchases of their business products and supplies from suppliers that are majorly located in urban areas; the cost of running a business is different in various regions due to economic, cultural and political reasons (Carson et al, 2005); prices of goods and services offered by small businesses are different between urban and rural areas (McMichael, 2000); and urban small businesses tend to have more access to information than their counterparts in rural areas (Stiglitz, 1999).

These results, in particular, are in line with Duncombe and Heeks (2002) view that small businesses in rural areas are quite localised and rely more on informal information systems, such as personal contact, than formal ICTs like telephones in carrying out their business processes. Hence, the hypothesis  $H_{1b}$  is supported.

#### 7.5.3.3 Description of respondents' perception on the influence of using telephony in Small Business processes between the Urban and Rural areas in Nigeria

As stated earlier, this subsection conducts a one sample t-test on the overall perception of the respondents based on their locations, with a view of drawing an empirical conclusion on the influence of using telephony services in small business processes. This study takes a test value of 3 which represents the no-effect position given in the question (between 1- strongly disagree and 5- strongly agree), in order to determine the extent of the influence of using telephony in business processes of small businesses in each region in Nigeria.

Table 7.34 below, presents the description of the respondents' perception on the influence of using telephony in small business processes in urban and rural areas in Nigeria.

Table 7.34: Description of respondents' perception on the influence of using telephony in Small Business processes in Urban and Rural areas in Nigeria

Influence of using telephony services in Small Business Processes	Test Value- 3	
	Mean Scores	
	Urban	Rural
The ability to reduce operational costs	4.25***	3.55***
The ability to acquire better market prices for your business	4.05***	3.76***
The ability to reduce the time it takes to make important business decisions	4.07***	3.68***
The use of the telephone helps you to save money by reducing the number of costly journeys for business purposes	4.32***	3.48***
The acquisition of new customers for your business	4.10***	3.58***
The ability to access more information on new products and their usefulness	4.05***	3.45***
Increase in sales and marketing strategy (telemarketing and advertising)	4.00***	3.63***
The risk involved in doing business has reduced since you started using a telephone	3.94***	3.52***

Source: Field survey, 2011

Note: \*\*\*Significant at 1%.

As presented in Table 7.34, the computed mean values for all the indicators of the influence of using telephony in business processes both in urban and rural areas in Nigeria are greater than the test value and are statistically significant at 1%.

The finding presented in Table 7.34, row 1, shows that the owner-managers of small businesses, irrespective of the business location, agree that the use of the telephone influences their ability to reduce operational costs. This finding supports that of Lechner, Dowling and Welpé (2006) that the owner-managers of small businesses use the telephone to gather information to assist them in reducing their operating costs and ensuring organisational effectiveness.

The finding presented in Table 7.34, row 2, illustrates that the owner-managers of small businesses, irrespective of the business location, agree that the use of the telephone influences their ability to acquire better market prices. This finding supports the view of Madhavan (2000) that the

owner-managers of small businesses innovatively use the telephone to gather information on current market prices and in turn use business strategies such as price to increase their market share.

The finding presented in Table 7.34, row 3, reveals that the owner-managers of small businesses, irrespective of the business location, agree that the use of the telephone influences their ability to reduce the time it takes to make important business decisions. This finding is in line with Smith (1999) that the acquisition and transmission of information by small businesses to the market place in addition to timely business decisions is essential in carrying out business activities in order to achieve enhanced business performance.

The finding presented in Table 7.34, row 4 indicates that the owner-managers of small businesses, irrespective of the business location, agree that the use of the telephone helps them to save money by reducing the number of costly journey for business purposes. This is in line with that of Indjikian and Siegel (2005) that the owner-managers of small businesses use the telephone to reduce the risk involved in travelling on bad roads, as well as to save time and money that may be better employed in carrying out other business processes.

The finding presented in Table 7.34, row 5 shows that the owner-managers of small businesses, irrespective of the business location, agree that the use of the telephone influences the acquisition of new customers for their businesses. This supports Brautigam (2003) that the owner-managers of small businesses combine technical knowledge and the use of telephony to facilitate marketing information which is beneficial for the business.

The finding presented in Table 7.34, row 6 indicates that the owner-managers of small businesses, irrespective of the business location, agree that the use of the telephone influences their ability to access more information on new products and their usefulness. This finding is in line with Hitt et al (2001) that the owner-managers of small businesses tend

to believe that more access to information on new products enhances their competitive advantage.

The finding presented in Table 7.34, row 7 shows that the owner-managers of small businesses, irrespective of the business location, agree that the use of the telephone influences their marketing strategy and increases the sales of their businesses. This finding supports that of Lingelbach, De la Vina and Asel (2005) that the owner-managers of small businesses use the telephone to make them available for business purpose at all times in order to increase their sales, which in turn reflect in their business profit.

The finding presented in Table 7.34, row 8 indicates that the owner-managers of the small businesses, irrespective of the business location, agree that the use of the telephone influences the risk involved in doing business. This finding supports that of Marlow (1992) who noted that the owner-managers of small businesses use the telephone to gather adequate and appropriate information that could help overcome issues that might threaten the survival and growth of the business.

These results, in particular are in line with Frempong (2009) that the use of telephony by small businesses has an impact in their business processes. Therefore, this study suggests that irrespective of location, the impact of using telephony is critical for small business processes in order to boost small business development.

#### 7.5.4 Analysis of respondents' perception relating to Growth Outcomes of increased access and the use of telephony by Small Businesses in Nigeria

##### 7.5.4.1 General Description of Growth Outcomes of increased access and the use of telephony by Small Businesses in Nigeria

Table 7.35 presents the results on growth outcomes of small businesses having increased access and the use of telephony in Nigeria

Table 7.35: Growth Outcomes of Small Businesses having increased access and the use of telephony in Nigeria

Growth outcomes of small businesses having increased access and use of telephony	N	Minimum	Maximum	Mean	S.D
Your service provision has improved through the use of the telephone	198	1	5	4.03	1.02
Overall, the use of the telephone has improved the performance of your business	198	1	5	3.96	1.12
Overall, the use of the telephone has contributed to the significant growth of your business	198	1	5	3.89	1.20
The use of the telephone has created a condition for your business to create jobs	198	1	5	3.67	1.18

Source: Field survey, 2011

Note: S.D: Standard deviation; A five point likert scale has been used 1: Strongly disagree and 5: Strongly agree

Table 7.35 presents results on the growth outcomes of small businesses having increased access to and use of telephony in Nigeria. A five point scale (1- strongly disagree and 5- strongly agree) was used in measuring these responses. The perception of the respondents also shows that their service provision has improved through the use of the telephone (mean score - 4.03); the use of the telephone has improved the performance of their businesses (mean score - 3.96); and that the use of the telephone has contributed to the significant growth of their business (mean scores - 3.89). The perception of the respondents shows that the use of the telephone has created a condition for their businesses to create jobs (mean score - 3.67).

The findings presented in Table 7.35, row 1, show that the majority of small business owner-managers agree that the use of the telephone has improved the service provision of their business. This finding supports

Harper (2003) that the use of the telephone enhances the capacity of the owner-managers of small businesses to acquire critical business information which increases their tendency to make effective business decisions, enables efficient coordination of activities within their business boundaries, as well as increasing their availability to customers and suppliers.

The findings presented in Table 7.35, row 2 show that the majority of small business owner-managers agree that the use of the telephone has improved the performance of their businesses. This finding supports Islam et al. (2011) who stated that the use of the telephone enhances the capability of the owner-managers of small businesses to introduce entrepreneurial activities that stimulate competitiveness and improve the profitability of the business, which in turn reflects on the overall performance of the business.

The findings presented in Table 7.35, row 3 illustrate that the majority of the owner-managers of small businesses agree that the use of the telephone has significantly contributed to the growth of their business. This finding is in line with Sam and Makor (2011) such that the use of the telephone enhances the capacity of the owner-managers of small businesses to develop the practical capabilities of their business by acquiring information necessary for developing creativity, sensing opportunities, management skills and the evaluation of business growth and expansion.

The findings presented in Table 7.35, row 4, show that the majority of the owner-managers of small businesses agree that the use of the telephone has helped their businesses to create jobs. This finding supports Fayolee (2007) such that the use of the telephone enhances the capability of the owner-manager to be dynamic, creative and capable of transforming a business concept into a viable business proposal in order to generate employment opportunities.

These results suggest that small businesses use the telephone to carryout business activities that enhance their capability to generate outcomes that

make a difference to the livelihood of their communities and regions. In particular, these findings are in line with Duncombe and Heeks (2002) who stated that an important contribution of small businesses in developing countries is seen in job creation and income generation.

#### 7.5.4.2 Test of differences on the Growth Outcomes of Small Businesses in Urban and Rural areas having increased access to and use of telephony in Nigeria

Table 7.36 presents results on the growth outcomes of small businesses in urban and rural areas having increased access to telephony in Nigeria.

Table 7.36: Growth Outcomes of Small Businesses in Urban and Rural areas having increased access to and use of telephony

Growth Outcomes of Small Businesses having increased access to and use of telephony	Mean Scores		T-test	Mann-Whitney U Test
	Urban	Rural		
Your service provision has improved through the use of the telephone	4.19	3.77	3.11***	-2.84***
Overall, the use of the telephone services has improved the performance of your business	4.17	3.64	3.28***	-3.09***
Overall, the use of the telephone has contributed to the significant growth of your business	4.09	3.59	2.93***	-2.81***
The use of the telephone has created a condition for your business to create jobs	3.88	3.36	2.80***	-2.39***

Source: Field survey, 2011

Note: \*\*\*Significant at 1%

Table 7.36 presents results on the growth outcomes of small businesses in urban and rural areas in Nigeria having increased access to and use of telephony. The results show that the perception of the respondents in urban areas on the growth outcomes of increased access to and use of telephony, is significantly different from the perception of the respondents in rural areas. It is evidenced from the Table that the computed values of the t-test statistics show that for the all indicators tested, significant

differences exist between urban and rural areas relating to the growth outcomes of small businesses having increased access to and use of telephony. This is further confirmed by the all through statistical significant differences under the Mann-Whitney U test conducted.

In order to ascertain, the direction of the differences, a cross tabulation was conducted and is presented in Table 7.37 below.

Table 7.37: Cross Tabulation results on the Growth Outcomes of Small Businesses in Urban and Rural areas having increased access to and use of telephony in Nigeria

Your service provision has improved through the use of the telephone						$\chi^2$
	1	2	3	4	5	9.24***
Urban area	3.3%	0%	13.3%	40.8%	42.5%	
Rural area	6.4%	7.7%	15.4%	43.6%	26.9%	
The use of the telephone services has improved the performance of your business						
	1	2	3	4	5	10.30***
Urban area	3.0%	5%	3.3%	48.3%	40%	
Rural area	14.1%	2.6%	14.1%	43.6%	25.6%	
The use of the telephone has contributed to the significant growth of your business						
	1	2	3	4	5	8.24***
Urban area	6.7%	2.5%	5.8%	45%	40%	
Rural area	12.8%	7.7%	15.4%	35.9%	28.2%	
The use of the telephone has produced a condition for your business to create jobs						
	1	2	3	4	5	4.188***
Urban area	6.7%	4.2%	17.5%	38.3%	33.3%	
Rural area	14.1%	6.4%	21.8%	44.9%	12.8%	

Notes:

(1- Strongly disagree; 2- Disagree; 3- No effect; 4- Agree; 5- Strongly agree);

$\chi^2$  = Chi-square; \*\*\*Significant at 1%.

As presented in Table 7.37, the cross tabulation results on the growth outcomes of small businesses having increased access to and use of telephony, show that the differences relate to the extent of the respondents' agreement on each of the indicators between the two locations. The analysis reveals that 83.3% of the respondents in urban areas and 70.5% of the respondents in rural areas agree that their service

provision has improved through the use of the telephone; 88.3% of the respondents in urban areas and 69.2% of the respondents in rural areas agree that the use of telephone services has improved the performance of their business. In addition, the analysis determined that 85% of the respondents in urban areas agree that the use of the telephone has contributed to the significant growth of their business, while only 64.1% of the respondents in rural areas agreed; 71.6% in urban areas and 67.7% of respondents in rural areas agree that the use of the telephone has created conditions for their business to create jobs.

Analysis of the chi-square test presented in Table 7.37 shows that all the indicators relating to the extent of growth outcomes of small businesses having increased access to and use of telephony, are statistically significant at 1%. These results show that the extent of the growth outcomes of the use of telephony services by small businesses varies between urban and rural areas. In particular, this finding is in line with that of North and Smallbone (1998) and Kapunda (2008) that small businesses in rural areas are shown to pursue different growth paths and outcomes, compared to those in urban areas. This can be attributed to the way in which they adjust to the opportunities. This evidence is further supported by Duncombe and Heeks (2002) who noted that small businesses in rural areas still rely more on informal networks. Hence, the hypothesis  $H_{1c}$  is supported.

#### 7.5.4.3 Description of respondents' perception on the Growth Outcomes of having increased access to and use of telephony by Small Businesses in Urban and Rural areas in Nigeria

As stated earlier, this subsection conducts a one sample t-test on the overall perception of the respondents based on their locations with a view of drawing an empirical conclusion on the growth outcomes small businesses of having increased access to and use of telephony. This study takes a test value of 3, which represents the no-effect position (between 1- strongly disagree and 5- strongly agree), in order to determine the extent of the growth outcomes of small businesses in each region having increased access and use of telephony. Table 7.38 presents a description

of the respondents' perception on the growth outcomes of small businesses in urban and rural areas having increased access to and use of telephony

Table 7.38: Description of Respondents' perception on Growth Outcomes of Small Businesses in Urban and Rural areas having increased access to and use of telephony in Nigeria

Growth Outcomes of Small Businesses' use of telephony services	Test Value- 3	
	Mean Scores	
	Urban	Rural
Your service provision has improved through the use of the telephone	4.19***	3.77***
Overall, the use of the telephone services has improved the performance of your business	4.17***	3.64***
Overall, the use of the telephone has contributed to the significant growth of your business	4.09***	3.59***
The use of the telephone has created a condition for your business to create jobs	3.88***	3.36***

Source: Field survey, 2011 \* Significant at 0.01 level of significance

As presented in Table 7.38, the computed mean values for all the indicators of growth outcomes of small businesses, both in urban and rural areas, having increased access to and use of telephony, are greater than the test value and are statistically significant at 1%.

The findings presented in Table 7.38, row 1 show that the owner-managers of the small businesses, irrespective of the business location, agree that the use of the telephone has improved the service provision of their business. This finding supports that of Apulu and Latham (2011) wherein the owner-managers of small businesses use the telephone to access business information that would enhance the quality of their business services to customers, which in turn would facilitate the competitiveness of the business.

The findings presented in Table 7.38, row 2 shows that the owner-managers of the small businesses, irrespective of the business location,

agree that the use of the telephone has improved the performance of their businesses. This finding is in line with the view of Madhavan (2000) that the owner-managers of small businesses use the telephone to acquire information and obtain better market prices from their business partners and other relevant networks in order to enhance their competitive advantage and profitability, which in turn is reflected in their overall business performance.

The findings presented in Table 7.38, row 3 shows that the owner-managers of the small businesses, irrespective of the business location, agree that the use of the telephone has contributed significantly to the growth of their businesses. This finding is consistent with that of Ilavarasan and Levy (2001) such that the owner-managers of small businesses use the telephone to connect with current and new customers, suppliers, distributors and business partners in order to access business information that would facilitate the introduction of business strategies and enhance business sales, which in turn, is reflected in the growth of the business.

The findings presented in Table 7.38, row 4, show that the owner-managers of the small businesses, irrespective of the business location, agree that the use of the telephone has helped their businesses to create jobs. This finding is in line with that of Van Praag (2003) such that the owner-managers of small businesses use the telephone to acquire information to identify business opportunities that could be exploited in expanding the business as well as creating jobs.

These results suggest that having increased access to and the use of telephony enhances the capacity of small businesses to generate growth outcomes; therefore this study suggests that irrespective of location, the use of telephony by small businesses facilitates growth outcomes which are reflected in regional development. This evidence is consistent with Acs, (2006) and Acs, Desai and Hessels (2008).

## 7.6 Summary of Results and Discussion

The changing role of telecommunications and in particular telephony, for small businesses in Nigeria as a consequence of the liberalisation of the telecommunications sector was investigated. This involved exploring the perception of the owner-managers of small businesses on the effect of increased access and use of telephony on business performance and regional development of the business location.

Arguably, the liberalisation of the telecommunications sector, which led to increased access to telephony, did facilitate small business growth in Nigeria. In particular, the liberalisation of the telecommunications sector provided opportunities for the majority of the respondents sampled in this thesis to start small businesses which invariably became a means of livelihood for the owner-managers.

In addition, as a consequence of the liberalisation of the telecommunications sector, a major determining factor in choosing the location of a small business was access to communication and information infrastructure. This was evidenced in the increased access to telephony enhanced networking for small businesses, as relevant information that is beneficial for business survival and expansion is exchanged between new and established small businesses, distributors, suppliers and competitors. However, despite increased access to telephony, small businesses in Nigeria still relied on informal networks such as friends and families to obtain useful and privileged information necessary for business growth.

The entrepreneurial activities of the majority of the small businesses sampled were also enhanced as they innovatively took advantage of increased access to telephony to introduce new products and services that would enhance the survival and growth of their business. However, most of the owner-managers of the small businesses sampled did not open new branches as a result of increased access to telephony and this may be attributed to a lack of financial resources needed for the setting up of new branches. Overall, the business performance of the small businesses

sampled was enhanced as a result of the liberalisation of the telecommunications sector in Nigeria.

In grouping the small businesses based on their location (urban and rural areas), the effect of increased access and use of telephony by the small businesses in Nigeria was analysed. The small businesses in urban areas had greater access to telephony compared to the small businesses in rural areas. This can be attributed to the structural barriers posed by geographic isolation, which in turn causes inequality between the two regions in telecom infrastructure provision. Nevertheless, the majority of the small businesses sampled within urban and rural areas still agree throughout that they have had increased access to telephony, which is indicative of the recent liberalisation of the telecom sector in Nigeria.

Fundamentally, the contribution of increased access to telephony did enhance the ability of the small businesses considered in this thesis to connect with new markets. In particular, the relative appeal and the small business owner-managers' usage pattern of telephone meet the priority needs of the businesses. It was demonstrated that irrespective of the business location, owner-managers of small businesses in Nigeria benefit from the use of telephony as it allows them access to a range of information, to exchange and communicate new ideas, to effectively carry out their business activities as well as connect with new markets and business networks. The observation by Duncombe and Heeks (2002), that the use of telephony by small businesses in rural areas is quite localised and relies more on informal information systems such as personal contacts than formal ICTs such as telephones, does appear to be the case in Nigeria as in this study, the telephone usage pattern of owner-managers of small businesses in rural areas is lower than that of their counterparts in urban areas.

In addition, the use of telephony has had an effect on the business processes of the small businesses sampled in this study. It is evidenced that the extent of the influence of using telephony in business processes is higher for small businesses in urban areas than their counterpart in rural areas. This may be because owner-managers of small businesses in rural

areas travel more than their counterparts in urban areas, in order to make bulk purchases of their business products from suppliers that are majorly located in urban areas. Moreover, the cost of running a business varies across the regions due to economic, cultural and political reasons, thus, the prices of goods and services offered by small businesses are not the same in urban and rural areas. Furthermore, owner-managers of small businesses in urban areas tend to have more access to information than their counterparts in rural areas. However, it was observed that irrespective of the business location, the influence of using telephony is crucial to small business processes, which provides a clear indication that the effect of using telephony in business processes may boost small business development in both rural and urban areas in Nigeria.

Arguably, the analyses of the growth outcomes of small businesses having increased access and using telephony have also revealed interesting findings. It is evidenced that increased access to and the use of telephony by small businesses appear to have majorly improved the service provision of the businesses; improved their business performance; contributed significantly to the growth of the business and facilitated the capacity of the small businesses to create jobs in Nigeria. However, it was observed that the extent of the growth outcomes was higher for small businesses in urban areas than their counterparts in rural areas. This may be because small businesses in rural areas are shown to pursue different growth paths and outcomes than small businesses in urban areas, which can be attributed to the way in which they adjust to the opportunities. However, small businesses in rural areas still rely more on informal networks. Notwithstanding this, it is evidenced in this study that irrespective of the business location, increased access to and the use of telephony by small businesses in carrying out business activities, enhances the capability of the small businesses to generate outcomes that make a difference to the livelihood of the communities and regions in which they operate in Nigeria.

In general, the findings suggest there are variations in the effect of increased access and use of telephony on urban and rural small

businesses. This is significant as it helps to test the nature of the relationship between increased access and use of telephony, small business performance and regional development at the micro-level. This relationship testing can help explain whether the effect of increased access and use of telephony may help explain enhanced business performance and the regional development of the business location.

Overall, as a consequence of the liberalisation of the telecommunications sector, these results suggest that increased access and use of telephony has enhanced the survival and growth of small businesses in Nigeria.

## 7.7 Conclusion

This chapter has presented the results of the changing role of telecommunications for small businesses in Nigeria as a consequence of the recent liberalisation of the telecommunications sector. The effect of increased access and use of telephony by small businesses within urban and rural areas in Nigeria was investigated. Given that the increased access and use of telephony enhances small business performance and regional development, this chapter has so far presented a partial insight into the nature of the relationship between increased access and use of telephony, small business performance and regional development in Nigeria. The next chapter presents further analyses that test the hypothesised relationship between increased access and use of telephony, small business performance and regional development depicted in the research model (fig.5.2) in Chapter Five.

## CHAPTER 8

### Telecommunications, Small Business Performance and Regional Development in Nigeria: Empirical evidence

#### 8.1 Introduction

In Chapter Seven, the preliminary analyses and findings of this study was presented. In this chapter, further analyses will be performed to explore the nature of the relationship between increased access and use of telephony, small business performance and regional development. The multivariate analyses in this chapter are used to provide an indication of the relative importance of each of the explanatory variables and to test the hypothesised relationships in the research model for the purpose of answering the research questions that were stated in Chapter Five.

In achieving this goal, the relevant data collected from the small businesses surveyed using the questionnaire was analysed. The statistical tool used in this chapter is logistic regression, which was discussed earlier in Chapter Six. This chapter is structured as follows. Section 8.2 presents an analysis on the influence of using telephony in business processes and enhanced business performance. Section 8.3 presents an analysis on the growth outcomes of increased access to and use of telephony by small business and the regional development of the business location. Section 8.4 presents a summary of the results and discussion. Section 8.5 presents a summary to the chapter.

## 8.2 Multivariate Analysis exploring the relationship between the influence of using telephony in small business processes and enhanced small business performance in Nigeria

This section aims to test one of the hypothesised relationship depicted in the research model and stated in chapter five and it is presented below:

H<sub>2</sub>: The influence of using telephony in business processes can significantly and positively predict enhanced small business performance in Nigeria; this is the general hypothesis from which two sub-hypotheses are developed

- H<sub>2a</sub>: The influence of using telephony in business processes can significantly and positively predict enhanced competitive advantage of small business in Nigeria.
- H<sub>2b</sub>: The influence of using telephony in business processes can significantly and positively predict enhanced profitability of small business in Nigeria.

In this section, the variables used in exploring the relationship in this study include: the variable measuring influence of using telephony in business processes and the variables measuring enhanced business performance. Initially, this study intended to use all the indicators used in measuring the extent of the influence of using telephony in business processes, as presented in the analysis of Chapter Seven for the logistic regression, however, some of the indicators were dropped as they were incorporated into other indicators. For example an indicator such as 'the extent of the influence of using telephony helps you to save money by reducing the number of costly journeys' was rejected as it was already incorporated in another indicator 'the extent of the impact of using telephony reduces operational costs'.

In addition, the main criteria used in the selection of indicators measuring the extent of the influence of using telephony in business processes used in the logistic regression, were based on the reviewed literature of Duncombe and Heeks (1999) as stated in Chapter Four.

The variables measuring business performance include competitive advantage and profitability. These two variables were analysed and

discussed in Chapter Seven and were transformed to enhanced business performance for the logistic regression analysis. The results for the competitive advantage of the small businesses (as defined in Chapter Five and presented in Chapter Seven) show that the respondents indicated that their businesses experienced the same or enhanced competitive advantage; this was later transformed as follows: respondents who indicated that their competitive advantage had increased were assumed to imply that their business performance was enhanced in terms of competitive advantage, while those that indicated their businesses remained the same, inferred that their business performance was not enhanced in terms of competitive advantage by using 1 and 0 to code the new variable respectively.

Also, the results of profitability for small businesses (as defined in Chapter Five and presented in Chapter Seven) show that respondents indicated their businesses experienced no significant change, were better and much better in terms of profitability; this was then transformed into another variable as follows: respondents that indicated no significant change were transformed to imply that their business performance was not enhanced in terms of profitability, while those that indicated better and much better were transformed to imply that their business performance was enhanced in terms of profitability using 0 and 1 to code the new variable respectively.

8.2.1 Multivariate Analysis exploring the relationship between the influence of using telephony in small business processes and enhanced competitive advantage

#### 8.2.1.1 Logistic Regression Analysis

In this subsection, a logistic regression is performed in order to identify whether the six indicators that measure the influence of using telephony in small business processes can explain enhanced small business performance in terms of competitive advantage. As discussed in Chapter Six, the logistic regression results in this study will be interpreted based on the evaluation of the model equation; the coefficient signs; the significance of the coefficient; and the meaning of the odds ratios.

##### The Regression Equation

The binary nature of the dependent variable means that logistic regression is an appropriate technique. The logistic regression equation in the model is specified below:

$$C_i = \alpha + \beta_1 CUST_i + \beta_2 TIME_i + \beta_3 INPDT_i + \beta_4 BEMARP_i + \beta_5 ROPCOST_i + \beta_6 ISAMAST_i + \varepsilon_i$$

Where  $C_i$  is enhanced competitive advantage

The variables used in the analysis are defined as follows:

Dependent variable (A dichotomous variable) - Enhanced Competitive Advantage

$C_i$  - Is a binary variable where small businesses were given a 1 if they had experienced enhanced competitive advantage since the liberalisation of the telecommunications sector; on the other hand, small businesses that did not experience enhanced competitive advantage were given a 0.

Explanatory Variables- Six Continuous variables (measured on a five point Likert-scale: 1- Strongly Disagree; 2 - Disagree; 3 - No effect; 4 - Agree; 5 - Strongly Agree)

CUST- Is a measure of the extent of the influence of using telephony in the acquisition of new customers

TIME- Is a measure of the extent of the influence of using telephony to reduce the time it takes to make important business decisions.

INPDT- Is a measure of the extent of the influence of using telephony to access more information on new products

BEMARP- Is a measure of the extent of the influence of using telephony in acquiring better market prices

ROPCOST- Is a measure of the extent of the influence of using telephony in reducing operational costs

ISAMAST- Is a measure of the extent of the influence of using telephony to increase sales and marketing strategy.

According to the regression equation, an enhanced small business performance, in terms of competitive advantage, is a function of the effect of the indicators of influence of using telephony in business processes. It is assumed that enhanced competitive advantage is based on the extent of the influence of using telephony in various business processes. This implies that the enhanced competitive advantage of a small business is a result of the consequence that arises in using telephony in business processes. Thus, enhanced business performance in this study is achieved by explaining that the probability of a small business having enhanced competitive advantage is based on the impact of the effect of using telephony in business processes.

### 8.2.1.2 Analysis of Enhanced Competitive Advantage

In carrying out this analysis, enhanced competitive advantage (the dependent variable used in the model) is the perception of the respondents regarding the competitiveness of their businesses as a performance measure since the liberalisation of the telecommunications sector. As discussed in Chapter Five, a small business is said to have enhanced competitive advantage when it is making use of a value creating strategy such as marketing, new product development, technology and process, so as to create value for its customers over current or potential competitors. In the analysis, small businesses were given a 1 if they had enhanced competitive advantage since the liberalisation of the telecommunications sector; whereas, small businesses that did not have enhanced competitive advantage were given a 0. The analysis of the dependent variable (enhanced competitive advantage) is presented in Table 8.1 below.

Table 8.1: Enhanced Competitive Advantage

Categories	Frequency	Percent
Yes	174	87.9
No	24	12.1
Total	198	100

Source: Field survey, 2011

As presented in Table 8.1, the analysis indicates that 87.9% of the study sample expressed their perception that their business performances have been enhanced in terms of competitive advantage. As discussed in Chapter Seven, this finding is in line with Baird, Lyles and Orris (1994), which found that small businesses that use value creating strategies may have enhanced competitive advantage. In effect, this finding is in support of Qureshil et al. (2009) who determined that small businesses having enhanced competitive advantage are able to create new jobs, increase productivity and sales through access to new markets and enjoy administrative efficiencies.

#### 8.2.1.3 Analysis of the influence of using telephony in business processes

To assess the independent variables, a correlation matrix test need is used to evaluate the independent indicators-related data. These measurements include a correlation and reliability test. The correlation test is used in this study to explore the strength of the relationship between the continuous explanatory variables to show any evidence that the variation in one variable matches the variations in all the other variables. The statistical technique used in examining the relationship between the studied indicators is the Spearman's rho correlation technique because they are continuous (Pallant, 2010). The reliability test is employed in checking the consistency of the measure used. Outliers were also checked in order to prevent them from influencing the analyses. The results of the correlation and reliability test are presented in Table 8.2 below:

Table 8.2: The Correlation matrix among the explanatory variables

Analysis type	Constructs		CUST	TIME	INPDT	BEMARP	ROPCOST	ISAMAST
Spearman's rho	CUST	Correlation coefficient	1.000	.588***	.635***	.496***	.442***	.375***
		Sig. (2-tailed)		.000	.000	.000	.000	.000
		N	198	198	198	198	198	198
	TIME	Correlation coefficient	.588***	1.000	.431***	.477***	.379***	.312***
		Sig. (2-tailed)	.000		.000	.000	.000	.000
		N	198	198	198	198	198	198
	INPDT	Correlation coefficient	.635***	.531***	1.000	.588***	.447***	.334***
		Sig. (2-tailed)	.000	.000		.000	.000	.000
		N	198	198	198	198	198	198
	BEMARP	Correlation coefficient	.496***	.477***	.558***	1.000	.452***	.278***
		Sig. (2-tailed)	.000	.000	.000		.000	.000
		N	198	198	198	198	198	198
	ROPCOST	Correlation coefficient	.442***	.379***	.447***	.452***	1.000	.254***
		Sig. (2-tailed)	.000	.000	.000	.000		.000
		N	198	198	198	198	198	198
	ISAMAST	Correlation coefficient	.375***	.312***	.334***	.278***	.254***	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
		N	198	198	198	198	198	198

Notes: \*\*\*Correlation is significant at 1% (2-tailed)

CUST is a measure of the extent of the influence of using telephony in the acquisition of new customers. TIME is a measure of the extent of the influence of using telephony in reducing the time it takes to make important business decisions. INPDT is a measure of the extent of the influence of using telephony to access more information on new products. BEMARP is a measure of the extent of the influence of using telephony in acquiring better market prices. ROPCOST is a measure of the extent of the influence of using telephony in reducing operational costs. ISAMAST is a measure of the extent of the influence of using telephony to increase sales and marketing strategies.

As presented in Table 8.2, the results show that the correlations are distributed between 0.254 and 0.635, and are classified as a moderate positive correlation since the values fall relative between the moderate level which is between 0.3 and 0.6 (Cohen, 1988; Gerber and Finn, 2005). Based on this, there seems to be no cause for concern on the issue of multicollinearity<sup>21</sup> among the independent variables used for this analysis. In addition, the significance of the correlation coefficient is determined by assessing the p-values. As shown in Table 8.2, all the p-values are significant at 1%, indicating that the observed correlation among all the indicators used in measuring the extent of impact of using telephony in business processes did not occur by chance.

In conducting the reliability test, all the six indicators measuring the extent of influence of using telephony in business processes have been used to test the study construct and are presented in Table 8.3 below.

Table 8.3: Reliability statistics for the influence of using telephony in Business processes

Cronbach alpha value	Number of items
0.794	6

As shown in Table 8.3, the internal consistency which gives the average correlation of the indicators measuring the influence of using telephony in business processes in the survey instrument is 0.794. Based on the results of this analysis, the instrument is reliable for respondents in this study because the closer the Cronbach's alpha<sup>22</sup> value is to 1, the greater the internal consistency of the items on the scale (Gliem and Gliem, 2003). In light of the number of items employed in the instrument, the Cronbach alpha values are extremely good indicators of the instrument's reliability (Hendrickson et al, 1993). The result shows that the chosen questions were consistent and valid in obtaining accurate responses. The reliability of the indicators of the impact of using telephony in business

<sup>21</sup> Multicollinearity is a statistical phenomenon describing a situation where two or more predictor variables in a multiple regression model are highly correlated.

<sup>22</sup> Cronbach alpha value is a reliability coefficient which indicates how a set of items are positively correlated to another. It calculates the average correlation among the items measuring the concept, and the values are dependent on the number of items in the scale ranging from 0 to 1.

processes are successfully accepted when Cronbach alpha is between 0.7 and 0.8 (Gerber and Finn, 2005). Nunnally (1978) and Pikkarainen et al. (2004) stated that 0.7 is the acceptable reliability coefficient. However, lower values are used in other works.

Table 8.4 below presents the results on the item-total correlation statistics on the influence of using telephony in business processes.

Table 8.4: Influence of using telephony in business processes item total correlation statistics

Influence of using telephony in business processes	Item-total correlation
CUST	0.71
TIME	0.54
INPDT	0.67
BEMARP	0.50
ROPCOST	0.54
ISAMAST	0.34

Notes: N-198

CUST is a measure of the extent of the influence of using telephony in the acquisition of new customers. TIME is a measure of the extent of the influence of using telephony in reducing the time it takes to make important business decisions. INPDT is a measure of the extent of the influence of using telephony to access more information on new products. BEMARP is a measure of the extent of the influence of using telephony in acquiring better market prices. ROPCOST is a measure of the extent of the influence of using telephony reduces operational costs. ISAMAST is a measure of the extent of the influence of using telephony to increase sales and marketing strategies.

As presented in Table 8.4, the item-total correlation was carried out to determine if any item was inconsistent with the other impacts of using telephony in business processes items and was not measured by any other scale items. Churchill (1979) stated that any item with an item-total correlation value of less than 0.3 is not well discriminated among the respondents and could be safely dropped. Accordingly, all the items within the influence of using telephony in business processes variable have more than 0.3 item-total correlation values, which indicate that all the items are good in assessing the impact of using telephony in business processes. In addition, according to Field (2009), items having an item-total correlation value above 0.3 are good and indicate that all the items positively

contribute to the overall reliability. The majority of the items in the "influence of using telephony in business processes variable" have an item-total correlation value of over 0.3, which means there is an internal consistency for this construct (Saunders and Munro, 2000). The item-total correlation values for the impact of using telephony in business processes variable are anticipated to give high overall estimation scores as they recognise the accurate items relative to the question of respondents' understanding of the influence of using telephony in business processes.

### The Logistic Regression Results

This subsection presents the results of the logistic regression using the six explanatory variables on the outcome variable (enhanced competitive advantage). The results are presented in Table 8.5 as follows:

Table 8.5: Logistic regression model of factors explaining enhanced competitive advantage of small businesses based on the influence of using telephony in business processes

Explanatory variables	$\beta$	SE $\beta$	Odds ratio	Collinearity Statistics	
				Tolerance	VIF
CUST	0.87 (9.13)***	0.29	2.40	0.43	2.29
TIME	0.77 (5.50)**	0.32	2.16	0.62	1.58
INPDT	0.25 (0.91)	0.26	0.77	0.49	2.02
BEMARP	0.98 (12.22)***	0.28	2.68	0.73	1.36
ROPCOST	0.02 (0.00)	0.22	1.02	0.66	1.48
ISAMAST	0.19 (0.55)	0.25	1.21	0.88	1.13
Constant	-1.55 (1.33)	1.34	0.21		
<b>Overall Model Evaluation</b>					
Omnibus Tests of Model Coefficients			$\chi^2$ 34.22	P-Value 0.000***	
<b>Model Summary</b>					
Cox & Snell R Square			Nagelkerke R Square		
0.16			0.30		

Notes: \*\*\*Significant at 1%; \*\*Significant at 5%; \*Significant at 10%.

Wald statistics in parentheses

CUST is a measure of the extent of the influence of using telephony in the acquisition of new customers. TIME is a measure of the extent of the influence of using telephony in reducing the time it takes to make important business decisions. INPDT is a measure of the extent of the influence of using telephony to access more information on new products. BEMARP is a measure of the extent of the influence of using telephony in acquiring better market prices. ROPCOST is a measure of the extent of the influence of using telephony reduces operational costs. ISAMAST is a measure of the extent of the influence of using telephony to increase sales and marketing strategies.

As presented in Table 8.5, the collinearity statistics presents multicollinearity results that may not be evident in the correlation matrix. The results shows that for all the explanatory variables, the tolerance<sup>23</sup> values are above 0.1, and the variance inflation factor (VIF)<sup>24</sup> is less than 10; therefore the assumption of multicollinearity has not been violated.

Table 8.5 presents the result of the model coefficients in which all the explanatory variables were tested. As shown in Table 8.5, the presence of a relationship between the dependent variable (enhanced competitive advantage) and the explanatory variables (indicators of influence of using telephony in business processes) is based on the statistical significance of the model (chi-square: 34.22, p-value: 0.000). The p-value is significant at 1% level of significance, indicating that the set of explanatory variables is good for the model.

As presented in Table 8.5, the model summary (Cox & Snell R Square and Nagelkerke R square) provides information that supports the usefulness of the model. As shown in Table 8.5, the two values are 0.16 and 0.30, suggesting that between 16% and 30% of the variability is explained by the explanatory variables included. Thus, the model is useful in explaining the outcome (enhanced competitive advantage).

Logistic Regression results in having Enhanced Competitive Advantage

The Logistic regression results for enhanced competitive advantage are presented above in Table 8.5. A positive sign on a coefficient indicates that an increase in the associated variable increases the probability of enhanced competitive advantage. On the other hand, a negative sign decreases the probability of enhanced competitive advantage. The signs of the coefficients of each of the explanatory variables in the model are expected to be positive and the finding presented in Table 8.5 is consistent with the hypothesised model in Chapter Five.

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<sup>23</sup> The tolerance value is an indicator of how much of the variability of the specified independent is not explained and the value should be greater than 0.1 so that the assumption of multicollinearity is not violated.

<sup>24</sup> The variance inflation factor (VIF) is the inverse of the tolerance value and the value should not be greater than 10 to avoid violating multicollinearity assumption (Pallant, 2010).

In the model, the variables - CUST, TIME, and BEMARP had positive coefficient signs and are statistically significant. The positive coefficient sign on CUST (the extent of the influence of using telephony in the acquisition of new customers) implies that an increase in the extent of the influence of using telephony in the acquisition of new customers for the business increases the probability of the small business having enhanced competitive advantage. The positive coefficient sign on TIME (the extent of the influence of using telephony in reducing the time it takes to make important business decisions) implies that an increase in the extent of influence of using telephony in reducing the time it takes to make important business decisions increases the probability of the small business having enhanced competitive advantage. The positive coefficient sign on BEMARP (the extent of influence of using telephony in acquiring better market prices) indicates that an increase in the extent of influence of using telephony services in acquiring better market prices increases the probability of the small business having enhanced competitive advantage.

However, the other explanatory variables (INPDT - the extent of the influence of using telephony to access more information on new products; ROPCOST - the extent of influence of using telephony in reducing operational costs; and ISAMAST- the extent of influence of using telephony to increase sales and marketing strategy) revealed positive coefficient signs but were not significant in the model tested. This indicated that these explanatory variables were not critical determinants in explaining enhanced competitive advantage for the small businesses.

In Table 8.5; column 4, the odds ratio<sup>25</sup> for each of the explanatory variable is provided. The strongest explanatory variable that explains enhanced competitive advantage is BEMARP - the extent of the influence of using telephony in acquiring better market prices, having an odds ratio of 2.68. This implies that the odds of a small business having enhanced competitive advantage increases 2.68 times with one unit change in the extent of the influence of using telephony in acquiring better market prices, while controlling for other explanatory variables in the model.

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<sup>25</sup> Odds ratio represents the change in the likelihood of being in one of the categories of the outcome variable when the value of an explanatory increases by one unit (Tabachnick and Fidell, 2007)

The odds ratio of 2.404 for CUST - the extent of the influence of using telephony in the acquisition of new customers implies that the odds of a small business having enhanced competitive advantage increases 2.4 times with one unit change in the extent of the influence of using telephony in the acquisition of new customers, while controlling for other explanatory variables in the model.

The odds ratio of 2.164 for TIME - the extent of the influence of using telephony to reduce the time it takes to make important business decisions implies that the odds of a small business having enhanced competitive advantage increases 2.16 times with one unit change in the extent of the influence of using telephony to reduce the time it takes to make important business decisions, while controlling for other explanatory variables in the model.

In terms of probability, the likelihood of a small business having enhanced competitive advantage with one unit change in the extent of the influence of using telephony in business processes is presented below:

For example, using the strongest explanatory variable that explains enhanced competitive advantage, the likelihood of a small business having enhanced competitive advantage with one unit change in the extent of the influence of using telephony in acquiring better market prices, is

$$P_i = \frac{e^{C_i}}{1 + e^{C_i}}$$

Where  $e$  is the natural logarithm and  $C_i$  is enhanced competitive advantage (the logistic regression equation)

$P_i$  is the probability that a small business will have enhanced competitive advantage with one unit change in the extent of the influence of using telephony in acquiring better market prices.

Assuming a small business whose probability of having enhanced competitive advantage with no change in "the extent of influence of using telephony in acquiring better market prices" is 0.5, the odds that the

small business will have enhanced competitive advantage are related to the probability by this equation:

$$\begin{aligned}
 \text{Odds (enhanced competitive advantage)} &= \frac{P(\text{enhanced competitive advantage})}{1 - P(\text{enhanced competitive advantage})} \\
 &= \frac{0.5}{1 - 0.5} \\
 &= 1
 \end{aligned}$$

Thus, a small business' corresponding odds of having enhanced competitive advantage with no change in the extent of influence of using telephony in acquiring better market prices is 1.

The likelihood of a small business having enhanced competitive advantage with one unit change in the extent of the influence of using telephony in acquiring better market prices is

$$1 * 2.68 = 2.68$$

Thus, the corresponding probability of a small business having enhanced competitive advantage with one unit change in the extent of the influence of using telephony in acquiring better market prices is

$$\begin{aligned}
 P_i (\text{Enhanced competitive advantage}) &= \frac{\text{Odds (enhanced competitive advantage)}}{(1 + \text{Odds (enhanced competitive advantage)})} \\
 &= \frac{2.68}{(1 + 2.68)} \\
 &= 0.73
 \end{aligned}$$

In effect, this implies that with one unit change in the extent of the influence of using telephony in acquiring better market prices, a small business is 73% more likely to have enhanced competitive advantage.

The probability of the other explanatory variables that explain the enhanced competitive advantage with one unit change in the extent of the influence of using telephony in business processes is presented in Table 8.6 below:

Table 8.6: Probability of the other explanatory variables that explains Enhanced Competitive advantage with one unit change in the extent of the influence of using telephony in business processes

Explanatory Variable	Odds ratio ( $e^{\beta_i}$ )	Probability of having enhanced competitive advantage (%)
CUST	2.40	70.6
TIME	2.16	68.4
INPDT	0.77	43.7
ROPCOST	1.02	50.5
ISAMAST	1.21	54.8

Notes: CUST is a measure of the extent of the influence of using telephony in the acquisition of new customers. TIME is a measure of the extent of the influence of using telephony in reducing the time it takes to make important business decisions. INPDT is a measure of the extent of the influence of using telephony to access more information on new products. BEMARP is a measure of the extent of the influence of using telephony in acquiring better market prices. ROPCOST is a measure of the extent of the influence of using telephony reduces operational costs. ISAMAST is a measure of the extent of the influence of using telephony to increase sales and marketing strategies.

These results are in line with the results of the descriptive analysis carried out in Chapter Seven, Section 7.5.3.3. In particular, these results are in line with Frempong (2009) that the use of the telephones exhibits positive impact on a number of crucial pillars of business processes such as access to market, reduction in operational costs and access to business information. Moreover, the impact of these pillars of business processes will contribute to the competitive advantage of the small business in the market. Given the significance of the overall results of the multivariate analysis exploring the relationship between the influence of using telephony in small business processes and enhanced competitive advantage, hypothesis H<sub>2a</sub> is supported.

Given that the data was collected from two different regions (urban and rural areas), the relative importance of each of the indicators of influence of using telephony in business processes was investigated, in order to identify which of the indicators contributed significantly to the predictive ability of the model in each region. The results are presented in Table 8.7 below.

Table 8.7: Logistic regression model of factors explaining Enhanced Competitive Advantage of small businesses based on the influence of using telephony in business processes within each region

Explanatory Variables	Urban Area			Rural Area		
	$\beta$	SE $\beta$	Odds ratio $e^{\beta}$	$\beta$	SE $\beta$	Odds ratio $e^{\beta}$
CUST	1.23 (5.35)**	0.53	3.42	1.43 (6.08)**	0.58	4.19
TIME	0.90 (3.19)	0.50	2.47	1.76 (4.25)**	0.85	5.82
INPDT	-0.07 (0.04)	0.36	0.92	-1.07 (3.50)	0.57	0.34
BEMARP	0.84 (4.79)**	0.38	2.33	1.54 (5.84)**	0.63	4.66
ROPCOST	0.37 (1.18)	0.34	1.40	1.64 (6.60)**	0.64	5.19
ISAMAST	0.25 (0.54)	0.34	1.28	-0.11 (0.05)	0.47	0.89
Constant	-1.26 (0.43)	1.92	0.28	-1.99 (0.43)	3.04	0.13
Overall Model Evaluation						
Omnibus Tests of Model Coefficients		$\chi^2$	P-Value	$\chi^2$	P-Value	
		18.13	0.10*	28.457	0.10*	

Notes: \*\*\*Significant at 1%; \*\*Significant at 5%; \*Significant at 10%.

Wald statistics in parentheses

CUST is a measure of the extent of the influence of using telephony in the acquisition of new customers. TIME is a measure of the extent of the influence of using telephony in reducing the time it takes to make important business decisions. INPDT is a measure of the extent of the influence of using telephony to access more information on new products. BEMARP is a measure of the extent of the influence of using telephony in acquiring better market prices. ROPCOST is a measure of the extent of the influence of using telephony reduces operational costs. ISAMAST is a measure of the extent of the influence of using telephony to increase sales and marketing strategies.

For the urban region model presented in Table 8.7, CUST (the extent of the influence of using telephony in the acquisition of new customers) and BEMARP (the extent of the influence of using telephony in acquiring better market prices), significantly contributed to the predictive ability of the outcome (enhanced competitive advantage of the small businesses in urban areas). This finding indicates that the extent of the influence of using telephony in the acquisition of new customers and the extent of the influence of using telephony in acquiring better market prices are critical determinants that explain the enhanced competitive advantage of small businesses in urban areas. This finding is in contrast with the results of Donner (2007) that the impact of using telephony in the acquisition of customers is complimentary, rather than competitive. This may be because owner-managers of small businesses in urban India still rely more on face-to face interactions than telephony despite access and use of telephony.

For the rural region model presented in Table 8.7, CUST (the extent of the influence of using telephony in the acquisition of new customers); TIME (the extent of the influence of using telephony in reducing the time it takes to make important business decisions); BEMARP (the extent of the influence of using telephony in acquiring better market prices) and ROPCOST (the extent of the influence of using telephony in reducing operational costs) contributed significantly to the predictive ability of the outcome (enhanced competitive advantage of the small businesses in rural areas). This indicates that the extent of the influence of using telephony in the acquisition of new customers; the extent of the influence of using telephony to reduce the time it takes to make important business decisions; the extent of the influence of using telephony in acquiring better market prices; and the extent of the influence of using telephony in reducing operational costs are critical determinants that explain enhanced competitive advantage of small businesses in rural areas. This finding is in line with the findings of Abraham (2006) that the impact of using telephony reduces information asymmetries in market, thereby making rural markets more efficient in terms of integration, market prices and competitive advantage.

The model fit test (Omnibus test of model coefficient) shows that the explanatory variables (indicators of the influence of using telephony in business processes) in the urban and rural region model are statistically weak in explaining the outcome (enhanced competitive advantage). This may be attributed to the sample size of each region.

Furthermore, the findings show there are differences in the significance of the coefficients of the explanatory variables between urban and rural regions and this supports the findings of Duncombe and Heeks (2002) that small businesses in rural areas, in addition to using telephony, rely more on informal information systems such as personal contact in carrying out their business processes.

## 8.2.2 Multivariate Analysis exploring the relationship between the influence of using telephony in small business processes and Enhanced Profitability

### 8.2.2.1 Logistic Regression Analysis

In this subsection, the logistic regression is performed in order to identify whether the above six indicators that measure the impact of using telephony in small business processes can explain enhanced small business performance in terms of profitability. In this section, the logistic regression results in this study will be interpreted based on the evaluation of the model equation, the signs of the coefficients, the significance of the coefficient, and the meaning of the odds ratios.

The Regression Equation

The binary nature of the dependent variable means that logistic regression is an appropriate technique. The logistic regression equation in the model is specified below:

$$PT_i = \alpha + \beta_1 CUST_i + \beta_2 TIME_i + \beta_3 INPDT_i + \beta_4 BEMARP_i + \beta_5 ROPCOST_i + \beta_6 ISAMAST_i + \varepsilon_i$$

Where  $PT_i$  is enhanced profitability

The variables used in the analysis are defined as follows:

Dependent variable (A dichotomous variable) - Enhanced Profitability

$PT_i$  - Is a binary variable where small businesses were given 1 if they had enhanced profitability since the liberalisation of the telecommunications sector; whereas, the small businesses that did not have enhanced profitability were given 0.

Explanatory Variables- Six Continuous variables (measured on a five point Likert-scale: 1 - Strongly Disagree; 2 - Disagree; 3 - No-effect; 4 - Agree; 5 - Strongly Agree)

CUST - Is a measure of the extent of the influence of using telephony in the acquisition of new customers

TIME- Is a measure of the extent of the influence of using telephony to reduce the time it takes to make important business decisions.

INPDT- Is a measure of the extent of the influence of using telephony to access more information on new products

BEMARP- Is a measure of the extent of the influence of using telephony in acquiring better market prices

ROPCOST- Is a measure of the extent of the influence of using telephony in reducing operational costs

ISAMAST- Is a measure of the extent of the influence of using telephony to increase sales and marketing strategies.

According to the regression equation, an enhanced small business performance in terms of profitability is a function of the effect of the indicators of the influence of using telephony in business processes. It is assumed that enhanced profitability is based on the extent of the influence of using telephony in the various business processes. This implies that the enhanced profitability of a small business is a result of the consequences that arises from using telephony in business processes. Thus, enhanced business performance in this study is achieved by explaining that the probability of a small business having enhanced profitability is based on the influence of using telephony in business processes.

### 8.2.2.2 Analysis of the Enhanced Profitability

In carrying out this analysis, enhanced profitability (the dependent variable used in the model) is the perception of the respondents regarding the financial performance of their businesses since the liberalisation of the telecommunications sector. As discussed in Chapter Five, a small business is said to have enhanced profitability based on its improved financial performance on the pre-tax profits of the business. In the analysis, there is a dummy dependent variable where small businesses were given 1 if they had enhanced profitability since the liberalisation of the telecommunications sector; otherwise, the small businesses that did not have enhanced profitability were given 0. The analysis of the dependent variable (enhanced profitability) is presented in Table 8.8 below.

Table 8.8: Enhanced Profitability

Categories	Frequency	Percent
Yes	151	76.3
No	47	23.7
Total	198	100

Source: Field survey, 2011

As presented in Table 8.8, the analysis indicates that 76.3% of the study sample expressed their perception that their business performances have been enhanced in terms of profitability. As discussed in Chapter Seven, this finding is in line with Chu et al (2008) that enhanced profitability is a critical factor defining the success of small businesses in developing countries.

### 8.2.2.3 Analysis of the influence of using telephony in business processes

To assess the independent variables, a correlation matrix test is used to evaluate the independent indicators-related data. These measurements include a correlation and reliability test.

The results of the correlation test are presented below, while the reliability tests have been earlier discussed in 8.2.1.3.

As presented in Table 8.9 below, the results show that the correlations are distributed between 0.254 and 0.635. These are classified as having a moderate positive correlation because the values fall relative between the moderate level which is between 0.3 and 0.6 (Cohen, 1988; Gerber and Finn, 2005). Based on this, there is no cause for concern on the issue of multicollinearity among the independent variables used for this analysis. In addition, the significance of the correlation coefficient is determined by assessing the p-values. As shown in Table 8.8, all the p-values are significant at 1%, indicating that the observed correlation among all the indicators used in measuring the extent of impact of using telephony in business processes did not occur by chance.

Table 8.9: The Correlation matrix among the explanatory variables

Analysis type	Constructs		CUST	TIME	INPDT	BEMARP	ROPCOST	ISAMAST
Spearman's rho	CUST	Correlation coefficient	1.000	.588**	.635**	.496**	.442**	.375**
		Sig. (2-tailed)		.000	.000	.000	.000	.000
		N	198	198	198	198	198	198
	TIME	Correlation coefficient	.588**	1.000	.431**	.477**	.379**	.312**
		Sig. (2-tailed)	.000		.000	.000	.000	.000
		N	198	198	198	198	198	198
	INPDT	Correlation coefficient	.635**	.531**	1.000	.588**	.447**	.334**
		Sig. (2-tailed)	.000	.000		.000	.000	.000
		N	198	198	198	198	198	198
	BEMARP	Correlation coefficient	.496**	.477**	.558**	1.000	.452**	.278**
		Sig. (2-tailed)	.000	.000	.000		.000	.000
		N	198	198	198	198	198	198
	ROPCOST	Correlation coefficient	.442**	.379**	.447**	.452**	1.000	.254**
		Sig. (2-tailed)	.000	.000	.000	.000		.000
		N	198	198	198	198	198	198
	ISAMAST	Correlation coefficient	.375**	.312**	.334**	.278**	.254**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.000	
		N	198	198	198	198	198	198

Notes: \*\*\*Correlation is significant at 1% (2-tailed)

CUST is a measure of the extent of the influence of using telephony in the acquisition of new customers. TIME is a measure of the extent of the influence of using telephony in reducing the time it takes to make important business decisions. INPDT is a measure of the extent of the influence of using telephony to access more information on new products. BEMARP is a measure of the extent of the influence of using telephony in acquiring better market prices. ROPCOST is a measure of the extent of the influence of using telephony in reducing operational costs. ISAMAST is a measure of the extent of the influence of using telephony to increase sales and marketing strategies.

### The Logistic Regression Results

This subsection presents the results of the logistic regression using the six explanatory variables on the outcome variable (Enhanced Profitability).

The results are presented in Table 8.10 as follows:

Table 8.10: Logistic regression model of factors explaining Enhanced Profitability of small businesses based on the influence of using telephony in business processes

Explanatory Variable	$\beta$	SE $\beta$	Odd ratio $e^{\beta}$	Collinearity Statistics	
				Tolerance	VIF
CUST	0.79 (11.81)***	0.23	2.22	0.43	2.29
TIME	0.49 (4.23)**	0.24	1.63	0.62	1.58
INPDT	0.13 (0.47)	0.19	1.14	0.49	2.02
BEMARP	0.03 (0.01)	0.23	1.03	0.73	1.36
ROPCOST	0.30 (2.62)	0.19	1.36	0.66	1.48
ISAMAST	0.09 (0.32)	0.17	1.10	0.88	1.13
Constant	-2.02 (3.72)	1.05	0.13		

Overall Model Evaluation		
Omnibus Tests of Model Coefficients	$\chi^2$ 39.555	P-Value 0.000***
Model Summary		
Cox & Snell R Square	Nagelkerke R Square	
0.18	0.27	

Notes: \*\*\*Significant at 1%; \*\*Significant at 5%; \*Significant at 10%.

Wald statistics in parentheses

CUST is a measure of the extent of the influence of using telephony in the acquisition of new customers. TIME is a measure of the extent of the influence of using telephony in reducing the time it takes to make important business decisions. INPDT is a measure of the extent of the influence of using telephony to access more information on new products. BEMARP is a measure of the extent of the influence of using telephony in acquiring better market prices. ROPCOST is a measure of the extent of the influence of using telephony reduces operational costs. ISAMAST is a measure of the extent of the influence of using telephony to increase sales and marketing strategies.

All the explanatory variables are on a scale of 1-5

As presented in Table 8.10, the collinearity statistics present the results on multicollinearity that may not be evident in the correlation matrix. The results shows that for all the explanatory variables, the tolerance values are above 0.1 and the variance inflation factor (VIF) is less than 10; therefore the assumption of multicollinearity has not been violated.

Table 8.10 illustrates the result of the model coefficients in which all the predictor variables were tested. As shown in Table 8.10, the presence of a relationship between the dependent variable (enhanced profitability) and the explanatory variables (indicators of influence of using telephony in business processes) is based on the statistical significance of the model (chi-square: 39.55, 6 p-value: 0.000). The p-value is significant at 1% level of significance, indicating that the set of predictor variables is good for the model.

As presented in Table 8.10, the model summary (Cox & Snell R Square and Nagelkerke R square) provides information that supports the usefulness of the model. As indicated in Table 8.10, the two values are 0.181 and 0.272, suggesting that between 18.1% and 27.2% of the variability is explained by the explanatory variables included. Thus, the model is useful in predicting the outcome (enhanced profitability).

#### Logistic Regression results in having Enhanced Profitability

The Logistic regression results for enhanced profitability are presented above in Table 8.10. A positive sign on a coefficient indicates that an increase in the associated variable increases the probability of enhanced profitability. On the other hand, a negative sign decreases the probability of enhanced profitability. The signs of the coefficients of each of the explanatory variables in the model are expected to be positive and the finding presented in Table 8.10 is consistent with the hypothesised model presented in Chapter Five.

In the model, the variables CUST and TIME had positive coefficient signs and are statistically significant. The positive coefficient sign on CUST (the extent of the influence of using telephony in the acquisition of new

customers) implies that an increase in the extent of the influence of using telephony in the acquisition of new customers for the business increases the probability of the small business having enhanced profitability. The positive coefficient sign on TIME (the extent of the influence of using telephony to reduce the time it takes to make important business decisions) implies that an increase in the extent of the impact of using telephony in reducing the time it takes to make important business decisions increases the probability of the small business having enhanced profitability.

However, the other explanatory variables (INPDT - the extent of the influence of using telephony to access more information on new products; BEMARP- the extent of the influence of using telephony in acquiring better market prices; ROPCOST- the extent of the influence of using telephony in reducing operational costs; and ISAMAST- the extent of the influence of using telephony to increase sales and marketing strategy) were not significant in the model tested. This indicated that these explanatory variables are not critical determinants in explaining enhanced profitability for the small businesses.

In Table 8.10; column 4, the odds ratio for each of the explanatory variable is provided. The strongest explanatory variable that explains enhanced profitability is CUST- the extent of the influence of using telephony in the acquisition of new customers, having an odds ratio of 2.22. This implies that the odds of a small business having enhanced profitability increases 2.22 times with one unit change in the extent of the influence of using telephony in the acquisition of new customers, while it is controlling for other explanatory variables in the model.

The odds ratio of 1.63 for TIME- the extent of the influence of using telephony to reduce the time it takes to make important business decisions implies that the likelihood of a small business having enhanced profitability increases 1.63 times with one unit change in the extent of the influence of using telephony to reduce the time it takes to make important business decisions, while it is controlling for other explanatory variables in the model.

In terms of probability, the likelihood of a small business having enhanced profitability with one unit change in the extent of the influence of using telephony in business processes is presented below:

For example, using the strongest explanatory variable that explains enhanced profitability, the likelihood of a small business having enhanced profitability with one unit change in the extent of the influence of using telephony in the acquisition of new customers is

$$P_i = \frac{e^{PT_i}}{1 + e^{PT_i}}$$

Where  $e$  is the natural logarithm and  $PT_i$  is enhanced profitability (the logistic regression equation)

$P_i$  is the probability that a small business will have enhanced profitability with one unit change in the extent of the influence of using telephony in the acquisition of new customers.

Assuming a small business whose probability of having enhanced profitability with no change in the extent of the influence of using telephony in the acquisition of new customers is 0.8, the odds that the small business will have enhanced profitability are related to the probability by this equation

$$\begin{aligned} \text{Odds (enhanced profitability)} &= \frac{P(\text{enhanced profitability})}{1 - P(\text{enhanced profitability})} \\ &= \frac{0.8}{1 - 0.8} \\ &= 4 \end{aligned}$$

Thus, a small business' corresponding odds of having enhanced profitability with no change in the extent of the influence of using telephony in the acquisition of new customers is 1.

The likelihood of a small business having enhanced profitability with one unit change in the extent of the influence of using telephony in the acquisition of new customers is

$$4 * 2.22 = 8.88$$

Thus, the corresponding probability of a small business having enhanced profitability with one unit change in the extent of the influence of using telephony in the acquisition of new customers is

$$\begin{aligned} P_i(\text{enhanced profitability}) &= \frac{\text{Odds}(\text{enhanced profitability})}{(1 + \text{Odds}(\text{enhanced profitability}))} \\ &= \frac{8.88}{(1 + 8.88)} \\ &= 0.90 \end{aligned}$$

In effect, this implies that with one unit change in the extent of the influence of using telephony in the acquisition of new customers, a small business is 90% more likely to have enhanced profitability.

The probability of the other explanatory variables that explain enhanced profitability with one unit change in the extent of the influence of using telephony in business processes is presented in Table 8.11 below:

Table 8.11: Probability of the other explanatory variables that explain Enhanced Profitability with one unit change in the extent of the influence of using telephony in business processes

Explanatory Variable	Odds ratio ( $e^{\beta_i}$ )	Probability of having Enhanced Profitability (%)
TIME	1.63	86.7
INPDT	1.14	82.0
BEMARP	1.03	80.5
ROPCOST	1.36	84.5
ISAMAST	1.10	81.5

Notes: CUST is a measure of the extent of the influence of using telephony in the acquisition of new customers. TIME is a measure of the extent of the influence of using telephony in reducing the time it takes to make important business decisions. INPDT is a measure of the extent of the influence of using telephony to access more information on new products. BEMARP is a measure of the extent of the influence of using telephony in acquiring better market prices. ROPCOST is a measure of the extent of the influence of using telephony reduces operational costs. ISAMAST is a measure of the extent of the influence of using telephony to increase sales and marketing strategies.

These results are in line with the results of the descriptive analysis carried out in Chapter Seven, Section 7.5.3.3. In particular, the results support the findings of Frempong (2009) and Samuel et al. (2005) that the influence of using telephony in business processes contribute to the profitability of small businesses. Given the significance of the overall results of the multivariate analysis exploring the relationship between the influence of using telephony in small business processes and enhanced profitability, hypothesis H<sub>2b</sub> is supported.

Overall, hypothesis H<sub>2</sub> is supported based on the significance of the overall results of the multivariate analysis exploring the relationship between the influence of using telephony in small business processes and enhanced small business performance (competitive advantage and profitability).

Given that the data was collected from two different regions (urban and rural areas), the relative importance of each of the indicators of the influence of using telephony in business processes was investigated in order to identify which of the indicators contributed significantly to the

predictive ability of the model in each region. The result is presented in Table 8.12 below.

Table 8.12: Logistic regression model of factors explaining Enhanced Profitability of small businesses based on the influence of using telephony in business processes within each region

Explanatory Variables	Urban Area			Rural Area		
	$\beta$	SE $\beta$	Odds ratio $e^{\beta}$	$\beta$	SE $\beta$	Odds ratio $e^{\beta}$
CUST	0.84 (3.85)	0.43	2.32	0.76 (6.08)*	0.58	2.15
TIME	0.61 (1.84)	0.45	1.74	0.31 (1.06)	0.85	1.33
INPDT	-0.44 (1.25)	0.40	0.56	-0.11 (3.50)	0.58	1.12
BEMARP	0.32 (0.58)	0.42	0.73	0.40 (1.36)	0.63	1.50
ROPCOST	0.62 (3.57)	0.34	1.85	0.01 (0.00)	0.64	0.99
ISAMAST	0.10 (0.54)	0.36	1.11	-0.13 (0.32)	0.47	1.14
Constant	-3.02 (2.94)	1.76	0.05	-2.55 (2.17)	3.04	0.08
Overall Model Evaluation						
		$\chi^2$	P-Value	$\chi^2$	P-Value	
Omnibus Tests of Model Coefficients		32.15	0.10*	14.41	0.10**	

Notes: \*\*\*Significant at 1%; \*\*Significant at 5%; \*Significant at 10%.

Wald statistics in parentheses

CUST is a measure of the extent of the influence of using telephony in the acquisition of new customers. TIME is a measure of the extent of the influence of using telephony in reducing the time it takes to make important business decisions. INPDT is a measure of the extent of the influence of using telephony to access more information on new products. BEMARP is a measure of the extent of the influence of using telephony in acquiring better market prices. ROPCOST is a measure of the extent of the influence of using telephony reduces operational costs. ISAMAST is a measure of the extent of the influence of using telephony to increase sales and marketing strategies.

For the urban region model presented in Table 8.12, none of the explanatory variables (indicators of influence of using telephony in business processes) contributed significantly to the predictive ability of the outcome (enhanced profitability of the small businesses in urban areas). This finding indicates that none of the indicators of the influence of using telephony in business processes is a critical determinant in explaining enhanced profitability of small businesses in urban areas.

For the rural region model presented in Table 8.112, CUST (the extent of the influence of using telephony in the acquisition of new customers) is the only explanatory variable that contributed significantly to the predictive ability of the outcome (enhanced profitability of the small businesses in rural areas). This indicates that the extent of the influence of using telephony in the acquisition of new customers is the main critical determinant that explains enhanced profitability of small businesses in rural areas. This finding is line with that of Duncombe and Heeks (2002) that small businesses in rural areas rely on informal networks, despite having access to telephones, to carry out their business processes.

The model fit test (Omnibus test of model coefficient) shows that the explanatory variables (indicators of the influence of using telephony in business processes) in the urban and rural region model are statistically weak in explaining the outcome (enhanced profitability). This may be attributed to the sample size of each region.

### 8.3 Multivariate Analysis exploring the relationship between the growth outcomes of increased access to and the use of telephony by small businesses and the regional development of the business location

This section aims to test one of the hypothesised relationships depicted in the research model and stated in Chapter Five and is presented below:

H<sub>3</sub>: The growth outcomes of increased access and use of telephony by small businesses in Nigeria can significantly and positively contribute to the development of the region of the business location; this is the general hypothesis from which four sub-hypotheses are developed:

- H<sub>3a</sub>: The creation of jobs by small businesses in Nigeria as a consequence of increased access and use of telephony can significantly and positively contribute to the development of the region of the business location.
- H<sub>3b</sub>: The improved performance of small businesses in Nigeria as a consequence of increased access and use of telephony can significantly and positively contribute to the development of the region of the business location.
- H<sub>3c</sub>: The significant growth of small businesses in Nigeria as a consequence of increased access and use of telephony can significantly and positively contribute to the development of the region of the business location.
- H<sub>3d</sub>: The improved service provision of small businesses in Nigeria as a consequence of increased access and use of telephony can significantly and positively contribute to the development of the region of the business location.

In this section, the variables used in exploring the relationship in this study include: the variable measuring growth outcomes of small businesses having increased access to and use of telephony and the variable measuring regional development of the business location.

### 8.3.1 Logistic Regression Analysis

In this subsection, logistic regression is performed in order to identify whether the four indicators that measure the growth outcomes of increased access to and use of telephony by small businesses can explain the regional development of the business location. The logistic regression results will be interpreted based on the evaluation of the model equation; the signs of the coefficients; the significance of the coefficients; and the meaning of the odds ratio.

The Regression Equation

The binary nature of the dependent variable means that logistic regression is an appropriate technique. The logistic regression equation in the model is specified below:

$$R_i = \alpha + \beta_1 CJOBS_i + \beta_2 IMPBUP_i + \beta_3 SIBGRT_i + \beta_4 IMSERP_i + \varepsilon_i$$

Where  $R_i$  is the regional development of the business location

The variables used in the analysis are defined as follows:

Dependent variable (A dichotomous variable) - Regional Development of the Business location

$R_i$  - Is a binary variable that takes the value 1 if increased access to telephony has contributed to the regional development of the small business location and 0 if increased access to telephony has not contributed to the regional development of the small business location.

Explanatory variables- Four Continuous variables (measured on a five point Likert-scale: 1 - Strongly Disagree; 2 - Disagree; 3 - No-effect; 4 - Agree; 5 - Strongly Agree)

CJOBS- Is a measure of the extent of the influence of the use of telephony by small businesses to create new jobs.

IMPBUP- Is a measure of the extent of the influence of the use of telephony by small businesses on improved business performance.

SIBGRT- Is a measure of the extent of the influence of the use of telephony by small businesses on significant business growth.

IMSERP- Is a measure of the extent of influence of use of telephony by small businesses on improved service provision.

According to the regression equation, regional development of the small business location is a function of the effect of the indicators of growth outcomes of increased access to and use of telephony by small businesses. It is assumed that regional development of the small business location is based on the growth outcomes of increased access to and use of telephony by small businesses. This implies that regional development of a small business location is a result of the growth outcomes that are generated by small businesses having increased access to and using telephony in business. Thus, regional development of the small business location in this study is measured by explaining the impact of the growth outcomes generated by small businesses based on increased access and use of telephony in business.

### 8.3.2 Analysis of regional development of the business location

In carrying out this analysis, regional development of the business location (the dependent variable in the model) is the perception of the respondents on the regional development of their business location as a result of increased access to telephony. As stated in Chapter Four, improvements in access to infrastructural facilities have an impact on small business activities and performance, which in turn reflects on regional development. In the analysis, there is a dummy dependent variable where small businesses were given 1 if increased access to telephony has contributed to the regional development of the business location; otherwise, small businesses where increased access to telecommunications has not contributed to the regional development of the business location were given 0. The analysis of the dependent variable (regional development of the business location) is presented in Table 8.13 below.

Table 8.13: Regional development of the business location

Categories	Frequency	Percent
Yes	178	89.9
No	20	10.1
Total	198	100

Source: Field survey, 2011

As presented in Table 8.13, the analysis indicates that 89.9% of the study sample expressed their perception that increased access to telephony have contributed to the development of their local area. As discussed in Chapter Seven, this finding is in line with Duncombe and Heeks (2005) that increased access to telecommunications in developing countries is important for the emerging contribution of information-related activities to employment, income generation and poverty reduction.

### 8.3.3 Analysis of Growth outcomes of increased access to and use of telephony by small businesses

To assess the explanatory variables, a correlation matrix test was used to evaluate the independent indicators-related data. These measurements include a correlation and reliability test. The statistical technique used to examine the relationship between the studied indicators is the Spearman's rho correlation technique because they are continuous (Pallant, 2010). The reliability test is used to check the consistency of the measure used. Outliers were also checked to prevent them from influencing the analyses.

The results of the correlation and reliability test are presented in Table 8.14 below.

Table 8.14: The Correlation matrix among the explanatory variables

Analysis type	Constructs		CJOBS	IMPBUP	SIBGRT	IMSERP
Spearman's rho	CJOBS	Correlation coefficient	1.000	.632***	.640***	.569***
		Sig. (2-tailed)		.000	.000	.000
		N	198	198	198	198
	IMPBUP	Correlation coefficient	.632***	1.000	.623***	.536***
		Sig. (2-tailed)	.000		.000	.000
		N	198	198	198	198
	SIBGRT	Correlation coefficient	.640***	.623***	1.000	.603***
		Sig. (2-tailed)	.000	.000		.000
		N	198	198	198	198
	IMSERP	Correlation coefficient	.569***	.536***	.603***	1.000
		Sig. (2-tailed)	.000	.000	.000	
		N	198	198	198	198

Notes: \*\*\*Correlation is significant at 1% (2-tailed)

CJOBS- Is a measure of the extent of the influence of the use of telephony by small businesses to create new jobs. IMPBUP- Is a measure of the extent of the influence of the use of telephony by small businesses on improved business performance. SIBGRT- Is a measure of the extent of the influence of the use of telephony by small businesses on significant business growth. IMSERP- Is a measure of the extent of the influence of the use of telephony by small businesses on improved service provision.

As presented in Table 8.14, there is no zero or negative correlation among any two variables, indicating that an increase in one variable value generates a decrease in another variable value. The results show that the correlations are distributed between 0.305 and 0.640, and are classified as moderate positive correlations because the values fall relative between the moderate level which is between 0.3 and 0.6 (Cohen, 1988; Gerber and Finn, 2005). Based on this, there is no cause for concern on the issue of multicollinearity among the explanatory variables used for this analysis. In addition, the significance of the correlation coefficient is determined by assessing the p-values. As shown in Table 8.14, all the p-values are significant at 1%, indicating that the observed correlation among all the indicators used in measuring growth outcomes of increased access to and use of telephony by small business did not occur by chance.

In conducting the reliability test, all the four indicators measuring the growth outcomes of increased access to and use of telephony by small businesses were used to test the study construct and are presented in Table 8.15 below.

Table 8.15: Reliability statistics for Growth Outcomes of increased access to and use of telephony by Small Businesses

Cronbach alpha value	Number of items
0.867	4

As shown in Table 8.15, the internal consistency which gives the average correlation of the indicators measuring growth outcomes of the increased access to and use of telephony by small businesses in the survey instrument is 0.867. Based on the results of this analysis, the instrument is reliable for respondents in this study because the closer the Cronbach's alpha value is to 1, the greater the internal consistency of the items in the scale (Gliem and Gliem, 2003). In light of the number of items employed in the instrument, the Cronbach alpha values are extremely good indicators of the instrument's reliability (Hendrickson et al, 1993). The result shows that the chosen questions were consistent and valid in obtaining the accurate responses. The reliability of the indicators of growth outcomes of increased access to and use of telephony by small

businesses are successfully accepted when Cronbach alpha is between 0.7 and 0.8 (Gerber and Finn, 2005). Nunnally (1978) and Pikkarainen et al. (2004) stated that 0.7 is the acceptable reliability coefficient but lower values are used in some literatures.

Table 8.16 below, presents the item total correlation statistics on the growth outcomes of increased access to and use of telephony by small businesses.

Table 8.16: Growth Outcomes of increased access to and use of telephony by Small Businesses' item total correlation statistics

Growth Outcomes of increased access to and use of telephony by Small Businesses	Item-total correlation
CJOBS	0.736
IMPBUP	0.717
SIBGRT	0.778
IMSERP	0.645

Notes: N-198

CJOBS- Is a measure of the extent of the influence of the use of telephony by small businesses to create new jobs. IMPBUP- Is a measure of the extent of the influence of the use of telephony by small businesses on improved business performance. SIBGRT- Is a measure of the extent of the influence of the use of telephony by small businesses on significant business growth. IMSERP- Is a measure of the extent of the influence of the use of telephony by small businesses on improved service provision.

As presented in Table 8.16, an item-total correlation was carried out to determine if any item was inconsistent with the rest of the growth outcomes of increased access to and use of telephony by small businesses items and not measured by any other scale items. Churchill (1979) stated that any item with an item-total correlation value of less than 0.3 is not well discriminated among the respondents and could be safely dropped. Accordingly, all the items within the growth outcomes of increased access to and use of telephony by the small businesses variable have more than 0.3 item-total correlation values, which indicate that all the items are good in assessing the growth outcomes of the increased access to and use of telephony by small businesses. In addition, according to Field (2009), items having an item-total correlation value above 0.3 are good and indicate that all the items positively contribute to the overall reliability.

The majority of the items in the growth outcomes of increased access to and use of telephony by small businesses variable have an item-total correlation value above 0.3, which means there is an internal consistency for this construct (Saunders and Munro, 2000). The item-total correlation values for the growth outcomes of increased access to and use of telephony by small businesses variable are anticipated to give high overall estimation scores as they recognise the accurate items relative to the respondents' understanding of the growth outcomes of the question of increased access to and use of telephony by small businesses.

## The Logistic Regression Results

This subsection presents the results of the logistic regression using the four explanatory variables on the outcome variable (regional development of the small business location). The results are presented in Table 8.17 below:

Table 8.17: Logistic regression of factors explaining the regional development of small business location based on the influence of the use of telephony by small businesses

Explanatory Variables	$\beta$	SE $\beta$	Odd ratio	Collinearity Statistics	
				Tolerance	VIF
CJOBS	0.23 (0.67)**	0.28	1.26	0.45	2.20
IMPBUP	0.77 (9.27)***	0.25	2.18	0.47	2.20
SIBGRT	0.64 (5.71)**	0.26	1.89	0.39	2.55
IMSERP	0.01 (0.00)	0.32	0.98	0.58	1.74
Constant	-1.55 (1.33)	1.34	0.21		
Overall Model Evaluation					
Omnibus Tests of Model Coefficients			$\chi^2$ 51.520	P-Value 0.000***	
Model Summary					
Cox & Snell R Square			Nagelkerke R Square		
0.23			0.48		

Notes: \*\*\*Significant at 1%; \*\*Significant at 5%; \*Significant at 10% N- 198  
Wald statistics in parentheses

CJOBS- Is a measure of the extent of the influence of the use of telephony by small businesses to create new jobs. IMPBUP- Is a measure of the extent of the influence of the use of telephony by small businesses on improved business performance. SIBGRT- Is a measure of the extent of the influence of the use of telephony by small businesses on significant business growth. IMSERP- Is a measure of the extent of the influence of the use of telephony by small businesses on improved service provision. All the explanatory variables are on a scale of 1-5.

As presented in Table 8.17, the collinearity statistics present results on multicollinearity that may not be evident in the correlation matrix. The results show that for all the explanatory variables, the tolerance values are above 0.1, and the variance inflation factor (VIF) is less than 10; therefore the assumption of multicollinearity has not been violated.

Table 8.17 presents the result of the model coefficients in which all the explanatory variables were tested. As shown in Table 8.17, the presence of a relationship between the dependent variable (Regional development of the small business location) and the independent variables (indicators of growth outcomes of increased access to and use of telephony by small businesses) is based on the statistical significance of the model (chi-square: 51.520, p-value: 0.000). The p-value is significant at 1% level of significance, indicating that the set of explanatory variables is good for the model.

As presented in Table 8.17, the model summary (Cox & Snell R Square and Nagelkerke R square) provides information that supports the usefulness of the model. As shown in Table 8.5, the two values are 0.23 and 0.48 suggesting that between 23% and 48% of the variability is explained by the explanatory variables included. Thus, the model is useful in explaining the outcome (regional development of the small business location).

#### Logistic Regression Results on Regional Development of Small Business location

The Logistic regression results for regional development of the small business location are presented above in Table 8.17. A positive sign on a coefficient indicates that an increase in the associated variable increases the probability of regional development of the business location. On the other hand, a negative sign decreases the probability of regional development of the business location. The signs of the coefficients of each of the explanatory variables in the model are expected to be positive and the finding presented in Table 8.17 is consistent with the hypothesised model in Chapter Five.

In the model, the variables- CJOBS; IMPBUP; and SIBGRT had positive coefficient signs and are statistically significant. The positive coefficient sign on CJOBS (the extent of influence of use of telephony by small businesses to create new jobs) implies that an increase in the extent of influence of use of telephony by small businesses to create new jobs

increases the probability of the regional development of the small business location, hence  $H_{3a}$  is supported.

The positive coefficient sign on IMPBUP (the extent of the influence of the use of telephony by small businesses on improved business performance) implies that an increase in the extent of the influence of the use of telephony by small businesses on improved business performance increases the probability of the regional development of the small business location, hence  $H_{3b}$  is supported.

The positive coefficient sign on SIBGRT (the extent of the influence of the use of telephony by small businesses on significant business growth) implies that an increase in the extent of the influence of the use of telephony by small businesses on significant business growth increases the probability of the regional development of the small business location hence  $H_{3c}$  is supported.

The variable IMSERP (the extent of the influence of the use of telephony by small businesses on improved service provision) was not significant in the model tested, hence  $H_{3d}$  is not supported. This indicated that this particular explanatory variable is not a critical determinant in explaining the regional development of the small business location.

In Table 8.17; column 4, the odds ratio for each of the explanatory variable is provided. The strongest explanatory variable that explains regional development of the small business location is IMPBUP- the extent of the influence of the use of telephony by small businesses on improved business performance), having an odds ratio of 2.18. This implies that the odds of regional development of a small business location increases 2.18 times with one unit change in the extent of the influence of the use of telephony by small businesses on improved business performance, while it is controlling for other explanatory variables in the model.

The odds ratio of 1.26 for CJOBS - the extent of the impact of the use of telephony by small businesses to create new jobs implies that the odds of regional development of a small business location increases 1.26 times with one unit change in the extent of influence of use of telephony by

small businesses to create new jobs, while is controlling for other explanatory variables in the model.

The odds ratio of 1.89 for SIBGRT- the extent of the influence of the use of telephony by small businesses on significant business growth implies that the odds of regional development of a small business location increases 1.89 times with one unit change in the extent of the influence of the use of telephony by small businesses on significant business growth, while it is controlling for other explanatory variables in the model.

In terms of probability, the likelihood of regional development of a small business location with one unit change in the extent of growth outcomes of increased access to and use of telephony by small businesses is presented below:

For example using the strongest explanatory variable that explains regional development of a small business location, the likelihood of regional development of a small business location with one unit change in the extent of influence of use of telephony by small businesses on improved business performance is

$$P_i = \frac{e^{R_i}}{1 + e^{R_i}}$$

Where  $e$  is the natural logarithm and  $R_i$  is regional development of the small business location (the logistic regression equation

$R_i$  is the probability of regional development of a small business location with one unit change in the extent of influence t of use of telephony by small businesses on improved business performance.

Assuming that the probability of regional development of a small business location with no change in the extent of influence of use of telephony by small businesses on improved business performance is 0.5, the odds of regional development of a small business location is related to the probability by this equation

$$Odds(R_i) = \frac{P(R_i)}{1 - P(R_i)}$$

$$= \frac{0.5}{(1-0.5)}$$

$$= 1$$

Thus, the regional development of a small business location corresponding odds with no change in the extent of influence of use of telephony by small businesses on improved business performance is 1.

The likelihood of regional development of a small business location with one unit change in the extent of influence of use of telephony by small businesses on improved business performance is

$$1 * 2.18 = 2.18$$

Thus, the corresponding probability of regional development of a small business location with one unit change in the extent of the influence of the use of telephony by small businesses on improved business performance is

$$P (R_i) = \frac{Odds (R_i)}{(1+Odds (R_i))}$$

$$= \frac{2.18}{(1+2.18)}$$

$$= 0.69$$

In effect, this implies that with one unit change in the extent of the influence of the use of telephony by small businesses on improved business performance, regional development of a small business location is 69% more likely to happen.

The probability of the other explanatory variables that explain regional development of small business location with one unit change in the extent of growth outcomes of increased to and use of telephony by small businesses is presented in Table 8.18 below.

Table 8.18: Probability of the other explanatory variables that explain Regional development of small business location with one unit change in the extent of growth outcomes of increased access to and use of telephony by small businesses

Explanatory Variable	Odds ratio ( $e^{R_i}$ )	Probability of regional development of a small business location (%)
CJOBS	1.26	55.8
SIBGRT	1.89	65.4
IMSERP	0.98	49.5

Notes: CJOBS- Is a measure of the extent of the influence of the use of telephony by small businesses to create new jobs. IMPBUP- Is a measure of the extent of the influence of the use of telephony by small businesses on improved business performance. SIBGRT- Is a measure of the extent of the influence of the use of telephony by small businesses on significant business growth. IMSERP- Is a measure of the extent of the influence of the use of telephony by small businesses on improved service provision.

These results are in line with the results of the descriptive analysis carried out in Chapter Seven, Section 7.5.4.3. In particular, the results are in line with those of Waverman et al. (2005) and Scott et al. (2004) that the use of the telephone (an information related infrastructure service) by small businesses facilitates improved service provision of market, promote investments and contributes to empowerment. In addition, these finding supports Frempong (2009) that the inherent advantages of small businesses having enhanced competitive advantage through the use of the telephone may contribute to the development of the economy of the area in which the business operates.

Overall, given the significance of the overall results of the multivariate analysis exploring the relationship between the growth outcomes of increased to and use of telephony by small businesses and regional development of a small business location, hypothesis  $H_3$  is supported.

Given that the data was collected from two different regions (urban and rural area), the relative importance of each of the indicators of growth outcomes of increased access and use of telephony by small businesses was investigated, in order to identify which of the indicators contributed

significantly to the predictive ability of the model in each region. The result is presented in Table 8.19 below.

Table 8.19: Logistic regression model of factors explaining the regional development of small business location based on growth outcomes of increased access to and use of telephony by small businesses within each region

Explanatory variable	Urban Area			Rural Area		
	$\beta$	SE $\beta$	Odds ratio	$\beta$	SE $\beta$	Odds ratio
CJOBS	0.33 (0.00)	0.25	0.00	0.01 (0.19)	0.34	0.99
IMPBUP	0.25 (0.00)	0.19	1.88	0.49 (3.28)**	0.29	1.63
SIBGRT	0.40 (0.00)	0.26	1.16	0.36 (1.06)	0.32	1.43
IMSERP	0.23 (0.00)	0.20	0.82	-0.24 (0.95)	0.41	0.78
Constant	-1.71 (0.00)	0.98	0.00	0.20 (0.02)	1.49	1.22
Overall Model Evaluation						
		$\chi^2$	P-Value	$\chi^2$	P-Value	
Omnibus Tests of Model Coefficients		69.032	0.125	6.705	0.152	

Notes: \*\*\*Significant at 1%; \*\*Significant at 5%; \*Significant at 10% N- 198 Wald statistics in parentheses

CJOBS- Is a measure of the extent of the influence of the use of telephony by small businesses to create new jobs. IMPBUP- Is a measure of the extent of the influence of the use of telephony by small businesses on improved business performance. SIBGRT- Is a measure of the extent of the influence of the use of telephony by small businesses on significant business growth. IMSERP- Is a measure of the extent of the influence of the use of telephony by small businesses on improved service provision.

As presented in Table 8.19, none of the indicators of the growth outcomes of increased access to and use of telephony by small businesses contributed significantly to the predictive ability of the outcome (Regional Development of the small business location in urban areas). This finding indicates that none of the indicators of growth outcomes of increased

access to and use of telephony by small businesses is a critical determinant in explaining the regional development of the small business location in urban areas.

Furthermore, as presented in Table 8.19, IMPBUP (the extent of the impact of the use of telephony by small businesses on improved business performance) is the only indicator that significantly contributed in explaining the regional development of the small business location in rural areas. This indicates that the use of telephony in improving business performance significantly contributes in explaining the regional development of the small business location in rural area.

However, it was found that CJOBS (the extent of the influence of the use of telephony by small businesses to create new jobs); SIBGRT (the extent of the influence of the use of telephony on significant business growth); and IMSERP (the extent of the influence of the use of telephony on improved service provision) did not have a statistical significance in explaining the outcome (Regional Development of the small business location in rural areas).

#### 8.4 Summary of Results and Discussion

The aim of this section is to discuss the findings of the multivariate analysis showing the relationship between the indicators used in measuring the impact of using telephony in business processes and enhanced business performance (enhanced competitive advantage and profitability); and the findings of the multivariate analysis showing the relationship between the variables measuring the growth outcomes of increased access to and use of telephony by small businesses and regional development of the small business location in order to present a typical framework in relation to the hypothesised model of this study. A discussion of the findings is presented as follows:

#### 8.4.1 The relationship between the influence of using telephony in business processes and enhanced competitive advantage

As presented in Table 8.5, the overall model evaluation shows that all the indicators of the influence of using telephony in business processes are statistically significant in explaining enhanced competitive advantage. Although, the results of the coefficients showed that three of the explanatory variables contributed significantly in explaining enhanced competitive advantage: CUST- the extent of the influence of using telephony in the acquisition of new customers; TIME- the extent of the influence of using telephony to reduce the time it takes to make important business decisions; and BEMARP - the extent of the influence of using telephony to acquire better market prices have a statistical significance in explaining the outcome (enhanced competitive advantage).

In addition, by looking at the odds ratio ( $e^{\beta}$ ) values, it can be suggested that the extent of the influence of using telephony in the acquisition of new customers; the extent of influence of using telephony to reduce the time it takes to make important business decisions; and the extent of the influence of using telephony in acquiring better market prices; significantly contributed to the probability of explaining enhanced competitive advantage of small businesses, thus  $H_{2a}$  is supported. This finding is in line with the finding of Frempong (2009) that the impact of using telephony in the critical pillars of business processes will contribute to the competitive advantage of the small business in the market.

In the research model, it was hypothesised that the influence of using telephony in business processes can significantly and positively predict enhanced competitive advantage of small business in Nigeria - Hypothesis 2a ( $H_{2a}$ ). The influence of using telephony in business processes would facilitate the acquisition of new customers for the business, reduce the time it takes to make important business decisions, allows access to more information on new products, facilitates the acquisition of better market prices, reduces risk, reduces operational costs and increases sales and marketing strategies (Duncombe and Heeks, 1999), which will in turn provide opportunities for small businesses to improve their efficiency and effectiveness in order to gain competitive advantage (Thong and Yap,

1995). The results of this study are in line with Kara et al., (2005) which suggests that the owner-managers of small businesses use telephony to obtain business information that are useful to develop and implement business strategies that will be responsive to the customer needs and wants as well as their competitors, in order to enhance their competitiveness within the business environment.

#### 8.4.2 The relationship between the influence of using telephony in business processes and enhanced profitability

As presented in Table 8.10, the overall model evaluation shows that all the indicators of the influence of using telephony in business processes are statistically significant in explaining enhanced profitability. Although, the results of the coefficients showed that two of the explanatory variables contributed significantly in explaining enhanced profitability: CUST - the extent of the influence of using telephony in the acquisition of new customers; and TIME- the extent of the influence of using telephony to reduce the time it takes to make important business decisions have a statistical significance in explaining the outcome (enhanced profitability).

In addition, by looking at the odds ratio ( $e^{\beta}$ ) values, it can be suggested that the extent of the influence of using telephony in the acquisition of new customers; and the extent of the influence of using telephony to reduce the time it takes to make business decisions significantly contributed to the probability of explaining the enhanced profitability of small businesses, thus  $H_{2b}$  is supported. This finding in Nigeria is in line with the findings of Frempong (2009) and Samuel et al., (2005) that the impact of using telephony in the critical pillars of business processes will contribute to the profitability of the small business in the market.

The finding of this study supports the findings of Esselar et al (2006) which determined that the impact of the use of telecommunications enhances the profitability of small businesses in thirteen African countries. The result of this study is similar to findings reported in previous literatures (such as Appiah-Adu, 1999; Samuel, Shah and Hadingham, 2005; Donner, 2006; Frempong, 2009) which implies that the innovative

use of telephony by small business owner-manager enables them to obtain timely market information on the prices of products and services delivered in order to ensure customer retention. As such, the customer's interest is a priority for the small business, as customer retention has been found to be one of the most important determinants of profitability in developing countries. Indeed, Samuel, Shah and Hadingham (2005) found that about sixty percent of the owner-managers of small businesses stated that the influence of using telephony in business processes enhanced the profitability of their businesses. This finding suggests that the orientation of the small businesses is tailored towards the customers and is in line with the finding of this study discussed in Chapter Seven relating to accessibility to customers as a major influence in choosing a business location.

Furthermore, this finding suggests that the use of telephony enhances the potential of small business owner-managers in acquiring new customers based on the satisfaction of a current customer. In the research model, it was hypothesised that the influence of using telephony in business processes can significantly and positively predict enhanced profitability of small business in Nigeria - Hypothesis 2b ( $H_{2b}$ ). The telephone is an information handling technology and businesses largely rely on information for business transactions such as the buying and selling of goods and services, availability of business-related information on supply and demand (Donner and Escobar, 2010), which invariably contributes to reducing the cost of doing businesses and enhances the profitability of the small businesses (Frempong, 2009). The results of this study are in line with Ziethaml (2000); Coetzer (2001) and Allen (2010), that the satisfaction of a customer is significant to the business purpose; wherein the purpose of the small business is to fulfil the needs of the customers. As such, small business owner-managers are being contacted by new customers, by telephone, for business transactions, based on the quality of service delivered by the business and the current customer's satisfaction, which in turn enhances the profitability of the small business.

#### 8.4.3 Relationship between the growth outcomes of increased access to and use of telephony by small businesses and regional development of the small business location

As presented in Table 8.17, the overall model evaluation shows that all the indicators of the growth outcomes of increased access to and use of telephony by small businesses are statistically significant in explaining the regional development of the small business location. Although, the results of the coefficients showed that three of the explanatory variables: CJOBS - the influence of the use of telephony by small businesses to create new jobs; IMPBUP - the influence of the use of telephony by small businesses on improved business performance; and SIBGRT- the influence of the use of telephony on significant business growth have a statistical significance in explaining the outcome (Regional Development of a small business location).

In addition, by looking at the odds ratio ( $e^{\beta}$ ) values, it can be suggested that the extent of the influence of the use of telephony by small businesses in creating new jobs; the extent of the influence of the use of telephony by small businesses on improved business performance; and the extent of the influence of the use of telephony on significant business growth significantly contributed to the probability of explaining the regional development of the small business location. This finding is line with that of Cecchini and Scott (2003) which suggests that increased access to telecommunications and use of the telephone by small businesses facilitates improved market service provisions, promotes investments and contributes to the empowerment of the people living within the location of the business.

This finding, in relation to the extent of the influence of the use of telephony by small businesses to create new jobs and the regional development of the business location, is similar to those reported in previous literatures (such as Wong, Ho and Autio, 2005; Klonner and Nolen, 2009; Aker and Mbiti, 2010) which reported that increased access to telecommunications and the use of telephony has enhanced the capabilities of small businesses to generate jobs in the region where they are located, which will in turn facilitate a more balanced economic growth,

thereby ensuring equitable income distribution in Africa. In effect, this study found that a relationship exists between increased access and use of telephony by small business and job creation, hence  $H_{3a}$  is supported. In line with Sternberg and Wennekers, (2005), this finding suggests that the owner-managers of the small businesses use telephony to access and coordinate information on the resources and skills required for business development. As such they create employment opportunities for people with the appropriate skills to carry out the activities of the small business, thereby contributing to the regional development of the business location by providing a source of livelihood to the people living within the region, hence reducing their poverty level.

As illustrated in the research model, it was hypothesised that the creation of jobs by small businesses in Nigeria as a consequence of increased access and use of telephony can significantly and positively contribute to the development of the region of the business location- Hypothesis 3a ( $H_{3a}$ ). Given that the telecommunications sector has generated a wide variety of business and entrepreneurship opportunities within the small business sector in developing countries, most of the employment opportunities generated are based on the innovativeness of the small business owner-manager in terms of the business strategies related to the use of telephony (Aker and Mbiti, 2010). In effect, this finding in Nigeria supports the findings of Pyramid Research (2009) which found that small business owner-managers took advantage of the increased access to telecommunications, as a result of the liberalisation of the telecommunications sector in Nigeria, by identifying and exploiting business opportunities within the telecom services. This is evidenced by the large number of small businesses operating using telecommunications services. Thereby creating a form of livelihood for them, or creating employment opportunities for people, which in turn have enhanced their ability to contribute to the development of the business location.

The finding, in relation to the extent of the influence of the use of telephony by small businesses on improved business performance and regional development of the business location, is in line with that of

Hannah (1991) and Gurstein (1999) that increased access to telecommunications and use of telephony has enhanced the capabilities of small businesses to improve their business performance, such that information and innovations necessary to promote competition and the efficient allocation of scarce resources are continuously present in the region where the businesses are located. In particular, this finding is in line with Duncombe and Heeks (2010) that the use of telephony by small businesses creates efficient information flow, wherein customers' needs and wants can be responded to timely and in any location, thereby creating regional competitive marketing opportunities. This in turn enhances the strengths and competitive advantages of small businesses and their ability to respond to the changing business environment would facilitate the development of the local economy of the business location (Porter, 2000).

In the research model, it was hypothesised that the improved performance of small businesses in Nigeria as a consequence of increased access and use of telephony can significantly and positively contribute to the development of the region of the business location - Hypothesis 3b ( $H_{3b}$ ). Both Premkumar and Roberts (1999) and Gurstein (1999) have found that the influence of having access and using telephony have provided opportunities for small businesses, which leads to economic benefits through price competition, lower inventory costs and new distribution channels. In particular, this finding is similar to the findings reported by Gurstein (1999) which determined that across the various regions of Nova Scotia, (both urban and rural , there has been an increasing use of information, associated with the market demands of products and services. Moreover, the capacity to integrate customers into the supply chains of various producers has increased across the different regions in the country.

The finding, in relation to the extent of the influence of the use of telephony on significant business growth and regional development of the business location, suggests that increased access to telecommunications and use of telephony has contributed to the growth of small businesses,

hence  $H_{3c}$  is supported. This finding is similar to that reported in previous literatures (such as Gurstein, 1999; Duncombe and Heeks, 2005; Teece, 2009; Okello-Obura and Matovu, 2011), that the owner-managers of small businesses use telephony as a business information tool for product or marketing information in order to coordinate the production of goods and services, increase the business sales and take advantage of more entrepreneurial activities, thereby providing opportunities for the local economies in terms of access to skills that were previously limited in the business location through continuous networking with relevant business networks and trading partners across the various regions where small businesses are located.

Although the finding in relation to the extent of the impact of the use of telephony on improved service provision and regional development of the business location did not significantly contribute to the predictive model  $H_{3d}$  is not supported. However it contributes to the overall model, hence,  $H_3$  is supported. Indeed, this finding is in line with the findings of Overa (2008) and Frempong (2009) who determined that the owner-managers of small businesses use telephony to contact and stay in touch with customers, suppliers and distributors in order to coordinate their business in an efficient and timely manner, as well as to reduce operational costs. The result of this study supports Overa (2008) who stated that most small businesses do not offer credit as this might increase the operational costs of chasing debts accrued to the small business, which in turn does not enhance the provision of services delivered by the small business to the people within the location of the small business.

## 8.5 Conclusion

In this chapter, the quantitative results from the multivariate analysis of the changing role of telecommunications for small businesses in Nigeria are discussed. Given that increased access and use of telephony enhances small business performance and regional development, this chapter has presented and discussed the nature of the relationship that exists between increased access and use of telephony, small business performance and regional development in Nigeria. The regression results showed that the factors relating to increased access and use of telephony by small businesses positively affects business performance and regional development. Fundamentally, it was identified that 'the extent of the influence of using telephony in the acquisition of new customers'; 'the extent of the influence of using telephony in taking less time in making important business decisions'; and 'the extent of the influence of using telephony in acquiring better market prices' are critical determinants that explains enhanced competitive advantage of small businesses, while 'the extent of the influence of using telephony in the acquisition of new customers', and 'the extent of the influence of using telephony in taking less time in making important business decisions' are critical determinants that explains enhanced profitability of small businesses.

Furthermore, it was identified that 'the extent of influence of the use of telephony by small businesses to create new jobs', 'the extent of influence of the use of telephony by small businesses on improved business performance', and 'the extent of the influence of use of telephony by small businesses on significant business growth' are critical determinants that explains regional development of the small business location.

In the next chapter, analysis of visual data and interviews is carried out to provide qualitative support to the statistical results presented in this and the previous chapter.

## CHAPTER 9

### INFLUENCE OF TELEPHONY ON ENHANCED SMALL BUSINESS PERFORMANCE: VISUAL DATA ANALYSIS AND INTERVIEW

#### 9.1 Introduction

As indicated in Chapter Six and given that this study is based on the mixed method (quantitative and qualitative), the main objective of this chapter is to corroborate the results presented in Chapter Seven and Eight relating to the influence of using telephony on enhanced small business performance in Nigeria. Hence, this chapter seeks to employ the qualitative approach as an extension of the quantitative analysis by analysing the visual data and the interviews in order to illustrate the findings from the quantitative approach.

This chapter is structured as follows: Section 9.2 briefly describes the owner-managers of the small businesses interviewed; Section 9.3 presents the structured description of the field observation, visual data and textual description of participants interviewed; and Section 9.4 presents a summary to the chapter.

#### 9.2 Description of Interviewees

The characteristics of the interviewees are presented in Table 9.1 below. The interviewees were chosen from the 198 respondents used in the quantitative analysis of this study. The interviewees were selected based on their willingness to participate in a telephone interview, which was indicated through the provision of their telephone contact details in the questionnaire used during the survey. All the participants, irrespective of their businesses, were based in Lagos State, Nigeria. Eight of the fifteen participants had their businesses located in urban areas, while the remaining seven participants had their businesses located in rural areas. Finally, at the time of the interview, all the participants were owner-

managers of the small businesses. The characteristics of the participants are presented in Table 9.1 below.

Table 9.1: Characteristics of Participants

Participants	Demographic Characteristics				
	Age	Sex	Educational level	Ownership structure	Length of time in Business (Years)
Participant 1	36	M	U	SP	5
Participant 2	29	M	S	SP	4
Participant 3	28	M	S	SP	6
Participant 4	34	F	S	SP	4
Participant 5	30	F	S	SP	4
Participant 6	33	M	U	SP	4
Participant 7	29	M	S	SP	3
Participant 8	39	M	S	SP	5
Participant 9	30	F	U	SP	6
Participant 10	37	M	S	SP	6
Participant 11	28	M	S	SP	4
Participant 12	32	M	S	SP	3
Participant 13	23	F	U	SP	3
Participant 14	25	F	U	SP	6
Participant 15	27	M	U	SP	5

Notes: M- Male; F-Female; U-University; S –Secondary; SP- Sole Proprietorship

As presented in Table 9.1 above, the age range of the participants is between 23 and 39. This data is in line with the data description presented in Chapter Seven and demonstrates that the small business owner-managers interviewed are young. This data supports the report of the National Bureau of statistics (2005) that the population of Nigeria is relatively young with 55% of the country’s population aged between 15 and 55. The participants interviewed are predominantly male (about 67%) which can be attributed to traditions of Nigerian society and the persistent notion that men (rather than women) have primary responsibility for the home and family (Pyramid, research, 2009). All the participants had some form of formal education, with the majority having secondary education

(60%). Finally, all the participants interviewed had a relevant number of years of experience in the businesses in which they were engaged.

### 9.3 Description of the Visual Data and Interviews

In this section, the visual data are presented and described. The visual data are pictures taken by the researcher as a non-participant observer during the fieldwork while administering the questionnaires for the study. The description of the visual data is carried out to corroborate the quantitative analysis on the main study's constructs. In addition, the results presented in this section are descriptive, focused on explaining how the influence of using telephony in business processes enhances small business performance, as discussed by fifteen owner-managers during the semi-structured interviews. Table 9.2 illustrates the results relating to the themes on the influence of using telephony in business processes. The following sub-sections discuss these themes in detail.

Table 9.2: Influence of using telephony in business processes on enhanced small business performance (Interviews)

THEMES ON INFLUENCE OF USING TELEPHONY	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15
TKNOW	X	X	X			X	X			X	X		X		
CUST	X	X	X	X	X	X				X	X	X			X
TIME	X		X		X	X	X	X	X		X				
ROPCOST/JOU	X			X				X	X	X	X	X			X
ISAMAST		X			X		X	X					X	X	X

Notes: P- Participant

TKNOW- The use of telephony facilitates knowledge sharing; CUST- The influence of using telephony in the acquisition of new customers; TIME- The influence of using telephony to reduce the time it takes to make important business decisions; ROPCOST/JOU- The influence of using telephony in reducing operational cost and costly journey; ISAMAST- The influence of using telephony to increase sales and marketing strategies.

### 9.3.1 The use of telephony facilitates knowledge sharing

The significant role of business information in determining enhanced business performance was discussed in Chapter Four, Section 4.2.2. Moreover, it was argued that the primary activity of most small businesses is the production of goods and services and the success of these businesses is dependent on the quality and quantity of information available to them. The quality and quantity of information received from both the supply and demand environments and how they are utilised for production processes is significant to the growth of the business (Porter, 2000).

The statistical findings presented in Table 7.25 indicate that the use of telephony has helped the majority of respondents (mean score: 4.01) in knowledge sharing. As presented in Table 7.26, there was no significant difference between the perception of the respondents in urban and rural areas, indicating that the use of telephony by small businesses facilitates the flow of appropriate information that is required for the production of goods and services in order to achieve enhanced business performance. An analysis of Figure 9.1 below illustrates this finding.

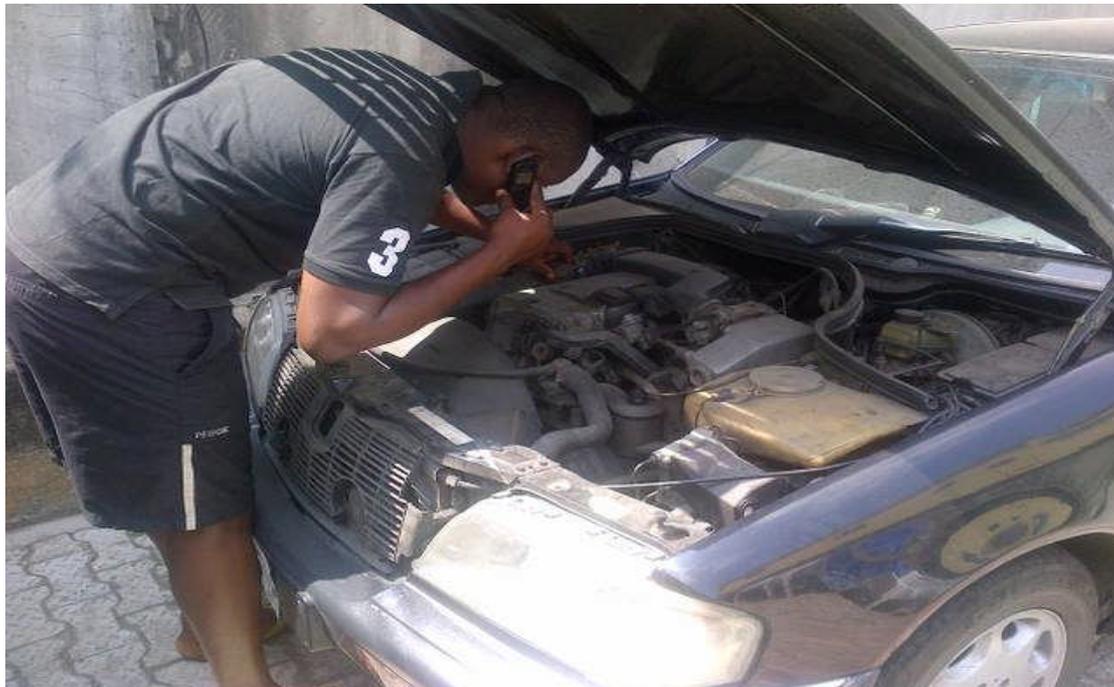


Figure 9.1: Use of telephony in knowledge sharing

Figure 9.1 represents an observational study wherein the automobile mechanic trainee shown in the picture is working on a customer's car, brought to the automobile workshop for repairs. Based on the observation, which is presented in the picture, the mechanic trainee is trying to fix the car but has encountered some difficulties and is confused about what next to do. The boss of the workshop, who happens to be the owner-manager, is working outside the workshop in another part of the town. The mechanic trainee makes a telephone call to the boss explaining the difficulties he is encountering and the boss is helping by sharing his knowledge so resolve the trainee's difficulties. Without the increased access to telecommunications and the use of telephony by the small business, as presented in the findings of Chapter Seven, this type of information exchange (knowledge sharing) would not have been possible.

In general, eight interviewees out of a total of fifteen mentioned that the use of telephony through knowledge sharing has enhanced their business performance (see Table 9.2). Textual descriptions of some participants' interview are presented below:

Participant 3:

An owner-manager of an automobile workshop stated in response to the telephone interview, that the use of telephony in knowledge sharing has enhanced his business performance in terms of competitive advantage:

"...My trainees have become more productive in carrying out the services of the business even in my absence, thereby increasing the confidence level of the customers with regards to the services rendered by the business, which in turn enables the customers to introduce their friends to the workshop based on the quality of services rendered."

Participant 6:

An owner-manager of a consultancy outfit stated in response to the telephone interview, that the use of telephony in knowledge sharing has enhanced his business performance in terms of profitability:

"...I engage in services that involve training people in using software, as such the use of telephony enables clients that have been previously trained by me and encountering difficulties with the use of the software to contact me without them coming to the business premises. In sharing my knowledge with the clients over the telephone at that time of difficulty, despite the fact they have paid for the initial training, an agreement is made between the client and I with regards to discounted payment to be made before the client can be assisted".

Participant 10:

An owner-manager of a media enterprise stated in response to the telephone interview, that the use of telephony in knowledge sharing has enhanced his business performance in terms of competitive advantage:

"...My employees are well trained in handling the cameras and other equipments used in carrying out the services of the business. Most of the employees of competitors usually make a telephone call to my employees to assist them in using the equipments by sharing their knowledge over the telephone and if it is unresolved, my employee might have to physically go and meet the competitor's employee to help out, this in turn allows my employees to have personal contact with clients involved in the business having an to give out business cards. This has helped increased the customer base of the business, attracting people based on the quality of the services offered".

In analysing the interviews, it was found that the use of telephony facilitates knowledge sharing, which in turn enhances the business performance of the small businesses. This result is consistent with the results obtained from the quantitative analysis (see Chapter Seven); such that the majority of the respondents, with a mean score of 4.01, agreed that the use of telephony has helped them in knowledge sharing. Given that small businesses use telephony to acquire and share knowledge (Duncombe and Heeks, 2002), the findings of this study, based on the response of the interviewees, support Chetty and Campbell-Hunt (2003) that small businesses through their networks of suppliers, customers and

distributors, exchange information that is beneficial for their business performance, thus hypothesis H<sub>2</sub> is supported. In particular, this result is in line with Bhavnani et al. (2008) that the use of telephony by small businesses facilitates vital information exchange, which stimulates market efficiency and is significant to the growth of the business.

### 9.3.2 The influence of using telephony in the acquisition of new customers

As stated in Chapter Four, telephony seems to be the easiest and most affordable means of communication for small businesses to use in order to contact all participants within the business environment of a developing economy (Donner, 2008). By providing a communication link for market participants such as business owners and customers, it becomes easy for business owners to acquire new customers who are interested in carrying out business transactions. In effect, the acquisition of more customers in the business should be reflected in its enhanced business performance. As presented in Table 7.29, it was statistically shown that the majority of the respondents' (mean score: 3.89), revealed that the use of telephony in business processes influences the acquisition of new customers, while 83.4% of the respondents in urban areas and about 65.4% of the respondents in rural areas agree that the use of telephony influences the acquisition of new customers for their businesses. In addition, as presented in Table 8.5 and Table 8.9, the results reveal that the influence of using telephony in the acquisition of new customers significantly enhances the competitive advantage and profitability of the small businesses. The analysis of Figure 9.2 below illustrates this finding.



Figure 9.2: Influence of using telephony in the acquisition of new customers

Figure 9.2 represents an observational study wherein the customer is giving the tailor the telephone details of her friend who is interested in having a dress made, similar to the one previously made by the tailor for the customer in the shop. Based on the observation which is presented by the picture, the tailor is collecting the telephone contact of the new customer in order to facilitate business transactions with the new customer. Without increased access to telecommunications and the use of telephony by small businesses, as presented in the findings of Chapter Seven, it would have been difficult for the tailor to contact and acquire the new customer for business transactions.

In general, ten interviewees out of a total of fifteen mentioned that the influence of using telephony in the acquisition of new customers has enhanced their business performance (see Table 9.2). Textual descriptions of a number of the participants' interviews are presented below:

Participant 4:

An owner-manager of a tailoring outfit stated in a telephone interview, that the influence of using telephony in the acquisition of new customers has enhanced his business performance in terms of competitive advantage and profitability:

"...The use of telephony helps me to acquire information in keeping up to date about the latest styles in vogue, which in turn helps me to make dresses that are of unique styles and mostly liked by many people that are not my customers. In addition, the use of telephony have helped me in acquiring new customers for the business based on the quality of his products either by me calling the newly introduced customer to quickly facilitate the business transactions or the new customer contacting me by telephone to facilitate business transactions".

Participant 12:

An owner-manager of an energy service outlet stated in the telephone interview, that the influence of using telephony in the acquisition of new customers has enhanced his business performance in terms of competitive advantage:

"....My business involves the sale of kerosene, which is largely used as fuel for cooking, and it is a product that is usually in high demand within my community (rural area). There are quite a number of people that engage in this line of business in my area, but just a few usually have kerosene for sale, because the demand for the product is higher than its supply. By using telephony, new customers contact me every day through the telephone to make enquiries once they become aware that in most instances, I regularly have kerosene to sell".

Participant 15:

An owner-manager of a vegetable farm stated in the telephone interview, that the influence of using telephony in the acquisition of new customers has enhanced his business performance in terms of profitability:

"...I am involved in vegetable farming and I do not start marketing my produce until late in the season. My customers are aware of this practice and tend to take advantage of this opportunity and get to buy my produce at discounted prices, while new customers that are introduced, contact me using telephony to know when my produce are available for sale and I usually sell my produce to the new customers at a higher price as compared to the old customers".

In analysing the interviews, it was found that the influence of using telephony in the acquisition of new customers enhances the business performance of small businesses. This result is consistent with results that have been obtained from the quantitative analysis (see Chapter Eight), that the majority of the respondents (mean score: 3.89), agreed that the use of telephony in businesses processes influences the acquisition of new customers for their business. In particular, this result is in line with Duncombe and Heeks (1999) that the use of telephony by small businesses influences the acquisition of new customers for the business through technical knowledge and marketing information, which in turn positively affects the business performance Brautigam (2003).

### 9.3.3 The influence of using telephony to reduce the time it takes to make important business decisions

According to Eggleston, Jensen and Zeckhauser (2002), producers, suppliers and consumers are linked together in an information network through the prevailing market prices, which act as coordination indicators for both the production and consumption sides. The influence of using telephony should assist small business owners to easily acquire relevant business information that is required to make appropriate and timely business decisions which result in enhanced business performance. As presented in Table 7.29, it was statistically shown that the majority of the respondents (mean score; 3.91), revealed that the use of telephony in businesses processes influence the ability of the small business owner-manager to reduce the time it takes to make important business decisions, while 80% of the respondents in urban areas and 69.2% of those in rural areas agree that the use of telephony influence their ability to reduce the time it takes to make business decisions. Analysis of Figure 9.3 below illustrates this finding.



Figure 9.3: Influence of using telephony in reducing the time it takes to make important business decisions

Figure 9.3 represents an observational study wherein the customer wants to buy a particular type of fish from the fish seller; the customer believes the cost price of the fish is quite expensive and this eventually gives rise to a price negotiation between the fish seller and customer. Based on observation of the picture, the fish seller is trying to convince the customer that the chosen fish is rare and expensive. The customer is not convinced about the price and was about to leave the shop since they could not agree over the cost price of the fish. Because the fish seller wish to make maximum profit that day, she quickly makes a telephone call to another fish seller asking for the prevailing market price of the fish, in order to make a timely decision about whether or not to sell the fish to the customer. Without the increased access and use of telephony, as presented in the findings of Chapter Seven, the fish seller would not have been able to quickly acquire information about the prevailing market price of a particular fish and would not have been able to make a timely business decision about whether or not to sell the fish.

Overall, eight interviewees out of a total of fifteen mentioned that the influence of using telephony in reducing the time it takes to make important business decisions has enhanced their business performance (see Table 9.2). Textual descriptions of some participants' interviews are presented below:

Participant 5:

An owner-manager of a fresh produce store stated in the telephone interview, that the influence of using telephony in reducing the time it takes to make important business decisions has enhanced her business performance in terms of competitive advantage and profitability:

"...The use of telephony assists me to rapidly acquire the prevailing market price for my produce in order to make timely business decisions on how much to sell my produce to my customers. This marketing strategy is used and has helped in gaining the confidence of customers with regards to getting value for their money and this in turn attracts more customers to my business".

Participant 7:

An owner-manager of a tele-centre stated in the telephone interview, that the influence of using telephony in reducing the time it takes to make important business decisions has enhanced his business performance in terms of profitability:

"...My business involves selling recharge cards at retail prices for different network operators. I use telephony to acquire the prevailing retail prices of most of the recharge cards, and this helps me to make a decision regarding how much I sell my recharge cards. I usually lower the price I sell the recharge cards as compared to my competitors in order to attract more customers, which in turn increases the overall number of recharge cards I sell".

Participant 11:

An owner-manager of an entertainment outfit stated the telephone interview, that the influence of using telephony in reducing the time it takes to make important business decisions has enhanced his business performance in terms of profitability:

"...It is important I keep a structured diary for my type of business. When I attend a program to entertain people and invited guests that attended the program want to make a booking, I usually have to make a telephone call to my employees to check if they have not booked a program in my diary so as to ensure I do not book two clients for the same day and to be able to confirm my availability to my new clients, in order not to lose any business".

In analysing the interviews, it was found that the influence of using telephony in reducing the time it takes to make important business decisions enhances the business performance of small businesses. This result is consistent with those that have been obtained from the quantitative analysis (see Chapter Eight), that the majority of the respondents' (mean score; 3.91), agree that the use of telephony in businesses processes influences the ability of the small business owner-

manager in reducing the time it takes to make important business decisions. In particular, this result is in line with that of Lechner, Dowling and Welppe (2006) that the acquisition of timely and accessible information by small businesses would ensure organisational effectiveness, reduce risk and positively influence the overall performance of the business. In effect, the acquisition and transmission of information by small businesses to the market place, allows businesses to remain sustainable, which is reflected in their enhanced business performance (Smith, 2008).

#### 9.3.4 The influence of using telephony in reducing operational costs and costly journeys

As stated in Chapter Four, small businesses in developing countries need to send and receive information to most participants in the business environments such as the suppliers, consumers, middlemen, as well as their competitors in order to ensure the efficient production of goods and services as well as reducing operational costs (Donner, 2008). According to the statistical analysis in Table 7.29, the majority of respondents (mean score- 3.97) agree that the use of telephony influences their ability to reduce operational costs, while 85.8% of the respondents in urban areas and about 57.7% of the respondents in rural areas agree that the use of telephony influences their ability to reduce operational cost. Analysis of Figure 9.4 below complements this finding.



Figure 9.4: Influence of using telephony in reducing operational costs and costly journeys

Figure 9.4 represents an observational study, wherein the lorry contains goods bought by small business owner-managers. As several regions of Nigeria have very bad roads and poor transportation systems (which is the case in many developing countries), small business owner-managers waste a lot of productive time, including resources such as money, travelling on roads like the one shown in Figure 9.4 for simple business transactions such as ordering and determining the availability of a particular product and confirming delivery dates. Without increased access and use of telephony, as presented in the findings of Chapter Seven, many small business owner-managers would have to make several costly journeys, which would be reflected in the business' operational costs.

In total, six interviewees out of a total of fifteen mentioned that the impact of using telephony in reducing operational costs and costly journeys has enhanced their business performance. However, two interviewees mentioned that the influence of using telephony in reducing operational costs and costly journeys has not enhanced their business performance (see Table 9.2). Textual descriptions of some participants' interview are presented below:

Participant 1:

An owner-manager of an automobile workshop stated in the telephone interview, that the influence of using telephony in reducing operational costs and costly journeys has enhanced his business performance in terms of profitability and competitive advantage:

"... I usually have to travel most of the time to get spare parts from another part of the town to repair my customer's car. Before increased access to telephony, I might to make two to three journeys before getting the particular spare part I want for just a customer. By using telephony, the journey times have reduced as I would call my suppliers to ask for availability of what the product I require, tell them to keep it for me and make the journey at my own convenient time to collect the spare part. The use of telephony in carrying out my activities reduces the amount of money and time I spend in travelling, which invariably has helped me to reduce the amount of time I spend in repairing the car and how much I charge my customers, thereby attracting more customers to my business".

Participant 8:

An owner-manager of a food canteen stated in the telephone interview, that the influence of using telephony in reducing operational costs and costly journeys has not enhanced his business performance:

"....My business involves selling cooked food and I need to make bulk purchase of the foodstuffs I use in my business. The influence of using telephony in reducing operational cost and costly journey has not enhanced my business performance, because most of time I need to do my bulk purchasing, I do not get access to my suppliers as a result of poor telecom network services or if I get through to my suppliers, I am been told several times I need to come quickly to purchase my products as the supply is limited and on sending some of my employees, they come back to tell me the products have finished by the time they got to the suppliers."

Participant 9:

An owner-manager of a chemist store stated in the telephone interview, that the influence of using telephony in reducing operational costs and costly journeys has enhanced her business performance in terms of profitability:

"....My business involves selling over-the-counter medicines and prescribed drugs and it is located in the rural area. Before increased access to telephony, I usually have to make a three day journey, wherein, I spend the first day on the road travelling to buy my goods from the closest wholesale store located in the urban area, while the second day is used for buying all the goods that I need and arranging for their delivery, and the third day is used in travelling back to my base. I usually spend a lot during these three days which in turn has an impact on my business. With increased access and use of telephony, I no longer have to close my shop for business trips, which in turn has facilitated increased sales in my business. In addition, I stay in my store to make telephone calls to the wholesale store to make my order and arrange with the delivery team when to pick my goods from the wholesale store for final delivery to my chemist store at a convenient time."

In analysing the interviews, it was found that the influence of using telephony in reducing operational costs and costly journeys enhances business performance for some of the small businesses, but not for others. It can be explained from the viewpoint of participants 1 and 9, that the influence of using telephony in reducing operational costs and costly journeys enhances business performance, as it has helped them to save resources such as time and money by avoiding costly journeys and diverting the saved resources to meaningful and profitable business activities, which in turn is reflected in the performance of the small businesses. This result is consistent with results obtained from the quantitative analysis (see Chapter eight). Indeed, this result is in line with that of Indjikian and Siegel (2005) that the use of telephony influences the coordination of economic activities of small businesses in developing

countries, which in turn reflects positively on their enhanced business performance.

From the viewpoint of participant 8, the influence of using telephony in reducing operational costs and costly journeys does not enhance business performance. The poor network services offered by the telecommunications providers was identified as a factor preventing small businesses from enjoying the benefits of using telephony in reduced operational costs and costly journeys. This result is in line with the view of Jerome and Ariyo (2004) that the provision of telecommunications infrastructures in developing countries such as Africa is below standard in terms of quality and quantity, which in turn has a minimal effect on the performance of small businesses. In addition, this finding might be one of the reasons why ROPCOST (the extent of the influence of using telephony in reducing operational costs) was not a critical determinant in explaining enhanced small business performance as deduced from the empirical results in Chapter Eight.

#### 9.3.5 The influence of using telephony to increase sales and marketing strategies

A major reason for business creation amongst most small businesses in developing countries is to increase sales as well as maximise profit (Lingelbach, De la Vina and Asel, 2005). As stated in Chapter Four, in order for small businesses to increase sales they have to acquire the right information for their production process. The ability to use telephony in business processes depends largely on the entrepreneurial characteristics of the owner-manager, while the influence of using telephony in business processes is expected to be reflected in enhanced business performance. According to the statistical analysis presented in Table 7.29, the majority of the respondents (mean score - 3.74), revealed that the use of telephony in businesses processes influences their sales and marketing strategies, while 72.5% of the respondents in urban areas and 56.4% of those in rural areas agree that the use of telephony influences their sales

and marketing strategies. An analysis of Figure 9.5 below complements this finding.



Figure 9.5: Influence of using telephony to increase sales and marketing strategy

Figure 9.5 represents an observational study, wherein a subsistence poultry farmer is able to sell his chickens without having to take them to the local market which is quite a distance from the poultry farm. Based on the observation presented in the picture, this advert is placed by the roadside close to the poultry farm which enables those who do not reside in the region and are driving past to contact the poultry farmer. In effect, the influence of using telephony in increasing sales and marketing strategies is relative to the innovativeness of the small business owner-manager. Without increased access and use of telephony, as presented in the findings of Chapter Seven, the poultry farmer might not be able to use telephony as a marketing strategy to attract more customers to his business.

In general, seven interviewees out of a total of fifteen mentioned that the influence of using telephony to increase sales and marketing strategy has

enhanced their business performance (see Table 9.2). Textual descriptions of some participants' interviews are presented below:

Participant 2:

An owner-manager of a poultry farm stated in the telephone interview, that the influence of using telephony to increase sales and marketing strategy has enhanced his business performance in terms of profitability and competitive advantage:

"...In my poultry business, the use of telephony has helped me acquire more customers who call me from all over the region to supply them chicken which in turn has helped in increasing the sales of my chickens. In addition, by adding my telephone number to an advert placed in front of my poultry farm as a marketing strategy, it has allowed me to engage in other activities knowing that a customer would call my telephone number when they want to buy the chicken. This has helped increased my profit as I operates twenty-four hours even after the local market has closed which in turn provides opportunities for working class people who come back late to still shop at their convenience."

Participant 13:

An owner-manager of a consulting firm stated in the telephone interview, that the influence of using telephony to increase sales and marketing strategy has enhanced her business performance in terms of profitability:

"...My business involves analysing data for students and my business premises do not provide a good opportunity for me to be easily located. Although my business is located quite close to two higher institutions, I have employed the use of small sign boards having my business name, what I do and my telephone contact on it, which are placed in several locations both within and outside the campus of the two higher institutions. Most of the time, my customers have to call me so as to locate my office and this has helped attract more customers to my business which in turn reflects in the profitability in my business".

Participant 14:

An owner-manager of a computer training centre stated in the telephone interview, that the influence of using telephony to increase sales and marketing strategy has enhanced her business performance in terms of competitive advantage and profitability:

"....My business involves training people in basic computer and typing skills. In marketing my business, I place posters having the business name, location and my telephone number with captivating words such as learn basic computer skills for free and pictures to attract the attention of people. Most of the time people would like to confirm if the advert they have seen is real or not, by calling me and I take the opportunity of the call to market my business which has helped in attracting more customers to my training centre and sometimes people also contact me through the telephone to tell me their friends introduced my training centre to them based on the quality of services I offer and this has helped increased the business sales."

Analysis of the interviews determined that the influence of using telephony to increase sales and marketing strategy enhances the business performance of the small businesses. This result is consistent with those obtained from the quantitative approach (see Chapter eight), such that the majority of the respondents (mean score- 3.74), agreed that the use of telephony in businesses processes influences their sales and marketing strategies. In addition, this result supports that of Wiklund and Shepherd (2005) that the influence of entrepreneurial orientation in terms of innovative strategies enhances the opportunities of small businesses in the marketplace, which in turn has a positive effect on business performance.

#### 9.4 Conclusion

This chapter analysed five pictures related to the study to provide qualitative support to the statistical results presented in Chapters Seven and Eight. In addition, this chapter provided a profile of fifteen owner-managers of small businesses in Nigeria through analysis of themes relating to one of the research objectives- 'to explore how the use of telephony in business processes enhances small business performance'. The major contributions of this chapter are twofold. First, it has qualitatively expressed the study constructs that had earlier been described in conceptual terms through visual data analyses. Secondly, this chapter has synthesized the research findings into a generalizable pattern by maximising the importance of individual owner-managers' experience in corroborating the results of the empirical findings.

Hence, these research findings may provide helpful points of reference by means of which small businesses will be able to examine and strengthen their competitive position, as well as increase their profit level within the business environment.

In the next chapter, the implications of the study with regards to its contributions to knowledge is presented in order to draw theoretical, conceptual and practical conclusions of the study and suggestions for future research will be discussed.

## CHAPTER 10

### CONCLUSION AND RECOMMENDATIONS

#### 10.1 Introduction

In Chapter One the study was introduced; in Chapter Two, the nature and theories of entrepreneurship, business growth and economic growth were presented. This was followed by Chapter Three in which small business and telecommunications development in Nigeria were described. In Chapter Four, telecommunications and small businesses and their implication for small business' performance and regional development were outlined, while in Chapter Five, the conceptual framework for the study was presented. In Chapter Six, the research methodology of the study was detailed, while in Chapters Seven and Eight, the quantitative results were presented and in Chapter Nine, a qualitative discussion of the research findings was offered.

Chapters Two and Three dealt with the broad and relevant literature related to the study, Chapters Four and Five discussed the conceptualisation of the literature reviewed, while Chapters Seven and Eight provided a quantitative analysis and Chapter Nine dealt with the qualitative analysis. The combination of Chapters that dealt with the literature reviewed, quantitative analysis and qualitative analysis reveals the link between the theoretical, quantitative and qualitative studies and describes the relationship between the four key concepts of this study: entrepreneurship and small business development (the influence of using telephony in business processes to enhance business performance of small businesses); small business location; telecommunications (increased access and use of telephony) by small business; and regional development (the impact of the growth outcomes of increased access and use of telephony in business).

This chapter discusses the conclusions of this study and is structured as follows. Section 10.2 presents a summary to the key findings and implication of the study. Section 10.3 evaluates the implications of the

study with regards to contribution to knowledge. Section 10.4 identifies suggestions for future research. Section 10.5 presents a summary to the chapter.

## 10.2 Summary of Key Findings and Implications

The findings of this study reveal that there is a positive and significant relationship between the influence of using telephony in business processes and enhanced business performance and the growth outcomes of small businesses having increased access to and use of telephony and the regional development of the business location in Nigeria.

However, the effect is not caused by increased access to telecommunications and the use of telephony alone. Indeed, it is the use of telephony, combined with the small businesses' entrepreneurial processes, customer orientation and the commitment to develop the small business, as well as the business location in which the small businesses operate.

The study has shown that just over half (55.6%) of the small businesses were created due to opportunity advantages. This finding implies that majority of small business owner-managers in Nigeria took advantage of the liberalisation of the telecommunications by starting small businesses that can provide a form of livelihood for them.

The study has shown that small businesses in Nigeria mainly benefitted from increased access to telephony as it helped them to connect with distributors, suppliers and competitors, as well as allowing them to gain access to business advice and information. In addition, the findings showed that the owner-managers of small businesses in Nigeria use the telephone to share knowledge within their business, which increased their capacity to connect with new customers and business partners. This finding implies that the use of telephony has increased the ability of small businesses to link with new markets and business networks across the various regions in Nigeria as well as having facilitated the process of

collecting, processing and distributing business information which in turn will facilitate their development.

The results of this study has shown that the influence of using telephony in business processes has a positive and significant impact on enhanced small business performance in Nigeria, as it helps small business owner-managers to gather data and create information that is valuable, especially in the acquisition of new customers, making timely and effective business decisions, as well as acquiring better market prices. This implies the use of telephony by the small business owner-managers has enabled them to obtain timely market information regarding the prices of products and services delivered, in order to ensure customer retention. As such small businesses need to make customer's interests a priority in Nigeria in order to enhance their profitability.

Finally, this study has shown that the influence of the use of telephony by small businesses in Nigeria on creating new jobs; improved business performance, significant business growth, and improved service provision have a statistical significance in contributing to the regional development of a business location in Nigeria. This implies that the owner-managers of small businesses use telephony to access and coordinate information on resources and skills required for business development in Nigeria. As such, they create employment opportunities and allow people with appropriate skills to carry out the activities of the small business, and this can enable them contribute to the development of the business locations they operate in. In addition, the use of telephony by small businesses has encouraged efficient information flow, wherein customers' needs and wants can be responded to in a timely fashion and in any location. Thereby, creating regional competitive marketing opportunities among small businesses in Nigeria. This, in turn, will enhance the strengths and competitive advantage of small businesses and their ability to respond to the changing business environment facilitates the development of the local economy of the business location in Nigeria. Furthermore, the owner-managers of the small businesses use telephony as a business information tool for product or marketing information in order to

coordinate the production of goods and services, increase business sales and take advantage of more entrepreneurial activities, thereby providing opportunities for local economies in terms of access to skills that were previously limited in the business locations in Nigeria.

The main aim of this research is to:

'Ascertain the changing role of telecommunications for small businesses in a developing country as a consequence of the liberalisation of the telecommunications sector. It seeks to investigate how owner-managers of small businesses in Nigeria perceive the effect of increased access and the use of telephony on business performance and its potential in enhancing the capability of the small business to contribute to the regional development of the business location'.

This was achieved by using the relevant literature to develop the conceptual framework and by employing three different theories in the literature to construct a research model; this was empirically tested to confirm the validity and reliability of the variables in the model. The study was able to demonstrate theoretically and empirically that increased access and use of telephony in small business activities is significantly related to enhanced business performance and also enhances the capability of small businesses in contributing to the regional development of the business location in which they operate.

The first objective of the study was:

'To explore how the entrepreneurial process of small businesses and increased access to telephony enhances business growth in Nigeria'

This objective was achieved as the results of the statistical analysis has shown that increased access to telephony presented business opportunities that facilitated small business creation, influenced the choice of business location and enabled the owner-managers of small businesses

to engage in entrepreneurial activities involving the use of telephony to enhance their business growth.

The second objective of the study was:

‘To evaluate the perception owner-managers of small businesses have on the extent of increased access and use of telephony in Nigeria’

This objective was achieved by the study through a statistical analysis of the data collected on the perception of small business owner-managers in urban and rural areas in Nigeria, on the effect of increased access to telecommunications, the influence of using telephony in business processes and the growth outcomes of increased access to and the use of telephony by small businesses. The findings has shown that the extent of increased access and use of telephony by small businesses varies between urban and rural areas of Nigeria, with rural small businesses experiencing a reduced effect following the liberalisation of the telecommunications sector in Nigeria (Hypothesis 1).

The third objective of the study was:

‘To explore the usage pattern of telephony by owner-managers of small businesses in Nigeria, in order to show that the contribution of increased access to telephony has enhanced the ability of small businesses to link with new markets and business networks’

This objective was achieved as the results of the statistical analysis and relevant literature outlined in the study has shown that the telephone plays an important role for small businesses as a mediating technology facilitating the process of collecting, managing and distributing business related information through a network of personal and inter-business contacts.

The fourth objective of the study was:

‘To explore how the innovative use of telephony in business processes enhances small business performance in Nigeria’

This objective was achieved by adapting theory taken from the reviewed literature to develop the predictor variable 'influence of using telephony in business processes', which was hypothesised to enhance the business performance (competitive advantage and profitability) of small businesses. The findings of the statistical analysis revealed that the influence of using telephony in business processes enhances small business performance. In particular, the statistical analysis identified three significant indicators: the influence of using telephony in the acquisition of new customers; the influence of using telephony to reduce the time it takes to make important business decisions; and the influence of using telephony to acquire better market prices enhances competitive advantage of the small businesses and two significant indicators- the influence of using telephony in acquisition of new customers; and the influence of using telephony to reduce the time it takes to make important business decisions enhances profitability of the small businesses (Hypothesis 2).

Finally, the fifth objective of the study was:

'To demonstrate that growth outcomes generated by the innovative use of telephony in small businesses can enhance the capability of small businesses to contribute to the regional development of the business location in which they operate'

This objective was achieved by adapting the theory taken from the literature review to develop the explanatory variable of 'the growth outcomes of small businesses having increased access to and use of telephony ' which was hypothesised to facilitate the ability of small businesses to contribute to the regional development of the business location in which they operate. The findings derived from the statistical analysis revealed that increased access and use of telephony generates growth outcomes that facilitate the capability of small businesses to contribute to the regional development of the business location in which they operate. In particular, the findings of the statistical analysis identified

three growth outcomes that significantly contribute to the regional development of the small business locations (Hypothesis 3).

### 10.3 Contributions to knowledge

This study set out to examine the changing role of telecommunications for small businesses in a developing country. It tried to provide evidence on the nature of the relationship between increased access and the use of telephony, small business performance and regional development of the small business location at the micro-level. The theoretical, methodological and practical contributions of this study would be discussed below.

#### 10.3.1 Theoretical Contributions

This study has attempted to contribute to the theoretical debate of the theories of entrepreneurship, economic growth, business growth and the impact of telephony in enhancing small business performance and contributing to the regional development of the business location. This study has contributed to the theories through the development of a conceptual framework that incorporates different perspectives related to explaining small business performance and regional development of the business location through small business growth outcomes.

As discussed in Chapter Five, theories are integral to research and their significance is central to the research process as the researcher uses them as a tool to make meaning of the research in order to achieve specific objectives (Leshem and Trafford, 2007). This study has used three theories (the theory of business growth; theory of entrepreneurship and theory of economic growth) as meaning-making tools in order to design and meet the specific needs the study. The combinations of the theories were used to connect and explain the research model, as well as to develop the testable hypotheses in order to enhance the validity of the research.

The theoretical implication for this study builds on the theory of 'opportunity entrepreneurship'. This relates to the emergent recognition on the critical development role of small businesses in developing countries, such as Nigeria. From within the perspectives of developing economies, theories from developed economies do not take adequate account of the underlying political and economic context relating to a developing country like Nigeria. Hence their explanatory power is restricted. Arguably, these small businesses contribute to employment creation as well as generating income for disadvantaged populace in developing nations such as Nigeria. Opportunity entrepreneurship constitutes understanding of how owner-managers of small businesses discover and take advantage of new business opportunities that are commercially viable. Most owner-managers of small businesses in developing countries including Nigeria are perceived to start informally and later formalise it when they realise significant benefits are being generated. Most of these small businesses in this study are very formal and are engaged in varying entrepreneurial processes that enhances their business performance. This is not just opportunity entrepreneurship, but a strategic type of entrepreneurship that enhances livelihood. This notion will differentiate between entrepreneurship as a form of business activity and as a way of improving one's life. This implication may be used to analyse entrepreneurship in broader categories in a developing economy context depending on the studied phenomenon. Thus, this study has shown how the phenomenon of entrepreneurial process is context specific and its influence on business development.

In addition, this study builds on the theories relating to emergent recognition on the critical development role of telecommunications in small business development in developing countries. Understanding entrepreneurial process using this view has been presented all through in this study. The regions under study will shape how small businesses have access to and the use of telephony in carrying out varying entrepreneurial processes that influences their business performance. The small businesses across the two regions in Nigeria have increased access to and use the telephony to contact family, friends and existing business

networks which have facilitated connectivity with new networks. However, it has been identified in this study that the small businesses within the rural regions in Nigeria still rely on informal networks to gain contacts with new networks. The regions in which businesses operate have a role to play in terms of access and use of the telecommunications technology.

Studying a phenomenon in relation to region specific issues helps identify important aspects of how the businesses operating within the region perceives and identifies opportunities and to what extent these opportunities are used for beneficial purposes. In addition, these small businesses have used the telephony to have increased access to business related information which has resulted in empowering them through increased bargaining power, improved efficiency and lowering of costs thereby enhancing their competitive advantage. It was shown in this study the importance of the influence of using telephony in business processes in enhancing business performance, wherein three critical business processes that explain enhanced competitive advantage and two critical business processes that explain enhanced profitability of small businesses were identified. The influence of using telephony in the acquisition of new customers, acquiring better market prices and taking less time to make business decisions were critical in determining the performance of these small businesses.

Thus, this study has demonstrated how the influence of using telephony in critical business processes enhances small business performance in a developing economy context. This implication may be used to advance the understanding of the critical development role of telecommunications in small business development in developing countries.

Furthermore, this study has conceptualised, tested and validated a research model that assesses the influence of telephony on small business performance and regional development of business locations in a developing economy context. Moreover, this can be applied to other related studies, such as influence of electricity on small business development.

The study highlighted the benefit of increased access to and the use of telephony in generating growth outcomes that enhance the ability of small businesses to contribute to the development of the business location. Moreover, the study also identified the impact of the three growth outcomes of the use of telephony by small businesses that specifically explain the regional development of small business locations in a developing economy.

### 10.3.2 Methodological Contributions

The results of the analyses in Chapter Eight present the two main relationships; the influence of using telephony in business processes and enhanced business performance; and the growth outcomes of increased access to and the use of telephony by small businesses and the regional development of the business location. The application and operationalisation of using the variable 'influence of using telephony in business processes' as an explanatory variable of enhanced business performance, presents a new methodical approach and is a valuable contribution in investigating the influence of telephony on small businesses compared to the more common variable 'teledensity' that is widely used in economics and management studies.

In addition, using the variable 'growth outcomes of increased access to and the use of telephony by small businesses' as a predictor variable of regional development of the business location, also offers a valuable contribution in investigating factors that explain the regional development of a business location, compared to hard data such as GDP growth commonly used in economics studies. In addition, this research significantly contributes to existing literature by enabling further use of these variables in empirical research relating to the use of telephony in business process, enhanced business performance and regional development of the business location.

Moreover, this study in employing an appropriate theoretical approach has combined quantitative techniques (analysis of data generated through survey) with qualitative techniques, (analysis of visual data and

interviews), in order to present a holistic view of the nature of the relationships in the study without endangering the ontological and epistemological position of the study.

### 10.3.3 Practical Contributions

The practical contribution of this study lies in its aim of relating the use of telephony with small business performance and regional development. By reviewing, analysing and synthesising the literature of economic growth, entrepreneurship and small business, business growth, regional development, networking and information and communication technology, an attempt is been made to proffer solutions relating to development issues such as poverty in developing countries such as Nigeria. In order to deal with development issues, for instance, poverty in Nigeria, wherein the use of the combination of different development tools can help reduce or eliminate poverty. This study has combined different scholarly perspectives which can be applied to help improve on small business performance, as well as to enhance the capability of the small businesses to contribute to the regional development of the business location in Nigeria and other relative developing countries.

The main objective of this study has been to ascertain how owner-managers of small businesses perceive the effect of increased access to telephony on business performance. In addition, the study has explored the potential of the growth outcomes of increased access to and use of telephony by small businesses in contributing to the regional development of the business location in which they operate.

Important issues that must be tackled in order to enhance the performance of small businesses in Nigeria and their ability to contribute to the regional development of their business location, includes the re-enforcement of the independent regulator of the telecommunications, Nigerian Communications Commission (NCC), to ensure universal access to telecommunications by implementing policies that would guarantee that operating telecommunications companies improve their infrastructural investments across the various regions in Nigeria. While much has been

achieved in terms of investment in and upgrading of the telecommunications infrastructure in urban areas, small businesses in rural areas in Nigeria have experienced reduced benefits of telecommunications liberalisation. The minimal effects of telecommunications liberalisation in rural areas have been statistically identified in this study. This is reflected in the extent of increased access to telephony available to small businesses. This suggestion can be exploited by policy makers to help improve the growth of entrepreneurial activities of the small businesses, which are precursors of economic growth.

Although, telecommunications infrastructure investment and upgrading is essential in order to enhance the capacity of the small businesses to contribute to economic growth, nevertheless the power of infrastructure investment might be limited by the traditional networks on which small businesses in rural communities of the developing world such as Nigeria rely. This has been statistically identified in this study, wherein small businesses in rural areas of Nigeria rely more on informal networks such as the personal contacts of friends and families in carrying out their entrepreneurial activities.

The study also provides owner-managers of small businesses with considerable information about how the use of telephony can be instrumental in the growth of their business, ensuring enhanced business performance and improving their ability to contribute to the development of the business location in which they operate.

Furthermore, the study reiterates to the owner-managers of small businesses that the success and survival of the small businesses depends on them. They have to develop their entrepreneurial and managerial skills, as well as engage in further entrepreneurial activities that could boost the businesses' chances of survival and success. In addition, the owner-managers of small businesses have to improve on their innovative use of telephony in order to create distinctive capabilities for their business to develop.

Finally, the study draws the attention of policy makers to the fact that small businesses in Nigeria need to be supported in terms of the provision of improved infrastructural services in order to enhance their capacity to contribute to economic growth.

#### 10.4 Suggestions for Future Research

This study presents analyses relating to increased access to and the use of telephony by small businesses and its influence on enhanced business performance and the regional development of the business location. The chosen predictor and outcome variables in this study were investigated based on certain criteria as discussed in Chapter Five; however this section presents alternatives to the research.

Although, the five constructs chosen for investigation in this study are considered to be particularly important in predicting enhanced business performance and regional development of the business location, future research consideration should be given to other predictors that are also important and worth investigating. Using different combinations of variables and relationships may yield better predictors for enhanced business performance and regional development. The construction of this study's conceptual framework and research model makes use of three theories that are related to the research constructs. Thus for future research, consideration should be given to the use of one theory to develop and construct a model in order to fully test the particular theory used.

The present study measured the research variables based on the perception of the owner-managers of small businesses. For future research, consideration should be given to other measurement variables using secondary data. The perceptions of the owner-managers were used as a measurement based on the difficulties encountered in relation to time constraints in assessing secondary data from the relevant organisations. In addition, conducting a structured interview for respondents can enhance the adoption of a qualitative technique, which can provide an in-

depth understanding on the influence of using telephony on small business performance and regional development.

Furthermore, this study was carried out in the commercial capital of Nigeria, thus for future research, consideration should be given to include a broader geographic sampling and larger urban and rural areas that could better reflect the national profile.

Telephony is considered to be one of the emerging information and communication technologies that can potentially improve the performance of small businesses and enhance their capability to contribute to the development of business location in developing countries. The choice of using telephony in this study was prompted by the rapid penetration of the services, which is a consequence of the liberalisation of the telecommunications sector and its common use by small businesses. However, other information and communication technologies (ICTs), such as broadband are currently on the increase. Future research consideration should be given to broadband services based on its potential to contribute to economic growth, in order to provide policy makers with reliable data that can inform policy developments. The model constructed for this study can be adapted and modified to conduct this investigation.

Based on the issue of infrastructure, future studies are needed to explore the relative importance of infrastructural services such as electricity supplies on small business performance across the various regions of Nigeria, in order to ascertain the perception of owner-managers of small businesses on whether an upgraded electricity supply is important to the development of their business location.

## 10.5 Concluding Remarks

Increased access and the use of telephony by small businesses have a significant impact in explaining enhanced business performance, which in turn improves the capability of the small businesses to generate growth outcomes that contribute to the regional development of the business location in the developing countries in which they operate. The effect of the liberalisation of the telecommunications sector has increased small business' access to telephony in Nigeria, which in turn has improved the capability of small businesses to link up with new markets and business networks. In addition, the influence of using telephony in business processes enhances business performance (competitive advantage and profitability) of small businesses and the increased access and innovative use of telephony enhances the capability of these small businesses to contribute to the regional development of their business location.

This study has used a new methodical approach in empirically quantifying the influence of telephony on business performance and regional development at the micro-level. It is essential to replicate the research in diverse environments over time to validate the strength of the variables used. The study has used perception based data which undermines its generalisation. As such future research should be considered by extending the study to larger businesses and increasing the sample size in order to allow adequate data for in-depth analysis. In addition, future studies should also consider other infrastructure, such as electricity, which might allow for a comparison of infrastructures that enhance small business performance and regional development of the business location.

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## APPENDIX



Sir/Madam,

In fulfillment of the requirements of the award of a PhD degree of Robert Gordon University, Aberdeen, Scotland, United Kingdom, I am conducting a study to ascertain the changing role of telecoms for small businesses in a developing country. The recent telecommunications liberalization in Nigeria has been chosen as a reference point for this study.

This research project seeks to investigate how owner-managers of small businesses in Nigeria perceive the effect of increased access and use of telephony on business performance and its potential in enhancing the capability of the small business to contribute to the regional development of the business location. Small businesses are the major players in this study, as small business owner-managers are recognized to be the key for identifying business opportunities and then exploiting them.

Your business is thus part of a representative sample of Nigerian small businesses selected to participate in this research, which is the first of its kind in Nigeria. Your opinions and answers to the questions below will be highly appreciated. It is hoped that your cooperation towards the accomplishment of this research will not only facilitate the realisation of this study's objective but also contribute to the increased performance of your business and your region, by reflecting on the advantages offered by access to telephones.

Please be assured that your answers would be treated with utmost confidence and nobody will be able to identify any individual or business in any of the resulting research reports.

Thank you for your support.

Yours Sincerely,  
Omowunmi S Adeola-Omole

QUESTIONNAIRE

Please tick the appropriate box

CHARACTERISTICS OF RESPONDENTS

1) Age: less than 30  31-40  41-50  Above 50

2) Sex: Male  Female

3) Education: No Formal Education  Primary Education

Secondary Education  Tertiary Education

4) How many employees does your business have?.....

5) Sector of Business: .....

6) What is the ownership structure of your business?

Sole proprietorship  Partnership

7) Please indicate your opinion as it relates to the characteristics of your business.

(Code -1-strongly disagree; 2-disagree; 3- no effect; 4-agree; 5-strongly agree)

	1	2	3	4	5
It is my primary source of income					
My business is independently owned and operated					
My business involves constant risk taking					
My business involves creativity and innovation					

8) Does your business have a telephone line? Yes  No

9) How long has your business had a telephone line?.....

10) Please provide your telephone number (optional).....

11) Are you currently devoting full time to this business, 35 hours or more per week? Yes  No

12) How long have you been in this business?

Less than 3  3-5years  6-10 years  above 10years

FUNDAMENTAL QUESTIONS

The recent liberalisation (introduction of competition) of the Nigerian telecom sector occurred in 1999. Please answer the following questions as they relate to your business.

13) What is your main reason for creating this business?

Survival purpose  Opportunity advantage

14) Where is your business located?

Within the city  Outside the city

15) Why did you choose this location?

Accessibility to communication and information infrastructures

Accessibility of customers

Availability of capital support for business

Accessibility of labour force

Cultural and Societal values of the business environment

16) Has the increased access to telephony influenced your business networking since the liberalisation of the telecom sector?

Yes  No

17) Please indicate your opinion to the following statements, as related to how network influences or has influenced your business

(Code -1-strongly disagree; 2-disagree; 3- no effect; 4-agree; 5-strongly agree)

	1	2	3	4	5
It helped at the start-up stage of my business					
It helps in gaining access to business information and advice					
It helps in connecting to distributors/suppliers/competitors					
It has helped in increasing my business sales					

18) Have you introduced a new product or services into the market since 1999? Yes  No

b) If yes, please give details.

19) Have you introduced a new business strategy for your business since 1999? Yes  No

b) What type of new strategies have you introduced?

Distribution

Marketing

Purchasing

Communications

Financial Assistance

Others (please specify).....

20) Have you opened a new branch of your business in another part of the city or country since 1999? Yes  No

21) How has your business performed in terms of competition since 1999?

Decreased  Stayed the same  Increased

22) How would you describe your business performance in terms of profitability since 1999?

Decreased  No Significant change  Better

**INCREASED ACCESS TO TELEPHONY**

23) Please indicate your opinion to the following statement(s) as it relates to your access to telecommunications services.

(Code -1-strongly disagree; 2-disagree; 3-no effect; 4-agree; 5-strongly agree)

	1	2	3	4	5
It is easy to acquire a telephone					
Telephone signals are always available					
The price of telephony services is affordable					
Most of the people you do business with have access and use telephones					
Other telecommunications services (internet, fax) are readily available and affordable					

24) Do you believe that increased access to a telephone has contributed to the regional development of your business location?

Yes  No

## USE OF TELEPHONY

25) Please indicate your opinion to the following statements as it relates to your business.

(Code -1-strongly disagree; 2-disagree; 3- no effect; 4-agree; 5-strongly agree)

	1	2	3	4	5
You use the telephone regularly for business transactions					
You use the telephone to stay in touch with customer and suppliers					
The easiest way for customers to contact you is through the telephone					
The use of telephones has helped you in knowledge sharing					
The use of telephone has helped you gain access to more business partners					
The use of telephone has increased the time spent networking with your business partners					
The use of telephone has increased the support you get from family or friends					
You find it difficult transacting business with someone who does not use or have access to a telephone					

## INFLUENCE OF USING TELEPHONY ON BUSINESS

26) Please indicate your opinion to the following statements as the use of telephony has influenced your business.

(Code -1-strongly disagree; 2-disagree; 3- no effect; 4-agree; 5-strongly agree)

	1	2	3	4	5
The acquisition of new customers for your business					
The ability of taking less time to make important business decisions					
The ability to access more information on new products and their usefulness					
The ability of acquiring better market prices for your business					
The ability to reduce operational cost					
Increase in sales and marketing strategy (telemarketing, advertising)					
The risk involved in doing business has reduced since you started using a telephony					
The use of telephony helps you to save money by reducing the number of costly journeys for business purposes					

OUTCOMES OF USE OF TELEPHONY ON BUSINESS

27) Please indicate your opinion to the following statements

(Code -1-strongly disagree; 2-disagree; 3- no effect; 4-agree; 5-strongly agree)

	1	2	3	4	5
The use of and access to telephony has created a condition for your business to create new jobs since 1999					
Overall, the use of telephony services has improved the performance of your business since 1999					
Overall, the use of telephony services has contributed significantly to the growth of your business since 1999					
Your service provision has improved through the use of and access to telephony since 1999					

28) Finally, what other types of infrastructure beyond telecoms do you think is of equal or higher relevance to the further development of your local area?

Roads

Electricity

Others (please specify).....

Would you be willing to cooperate with the researcher in participating in a telephone interview to follow up in depth some of the ideas which would arise from the survey? Yes  No

(If yes, please ensure that you have provided your telephone number at question 9)

THANK YOU FOR YOUR TIME AND HELP IN FILLING THIS QUESTIONNAIRE.