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The influence of ICT interventions on the performance of informal traders in the Sandton region

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A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management specialising in Entrepreneurship and New Venture Creation

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ABSTRACT

The establishment and growth of informal traders in South Africa have been attributed with a considerable need and desire for these informal economies to achieve economic growth, create sustainable entrepreneurial opportunities, assist with employment opportunities, etc. A number of factors have an impact on how these informal traders can become competitive and formalised, and one of these enablers is the influence of ICT interventions by informal economies to improve business performance.

The purpose of this research was to establish the perceived relationship between the influence of ICT usage by informal traders and the perceived impact on business performance. The intended objective was to assess whether the perception of ICT adoption by informal traders had a positive or negative business performance outcome.

The research methodology adopted was a quantitative approach, which was guided by a positivist paradigm. The population targeted were informal traders in the Sandton region of Johannesburg, South Africa. A questionnaire was distributed to gather data.

The influence of ICT and the perceived impact within informal traders in the Sandton region revealed some findings consistent with existing literature. It was the overall accepted perception that ICT adoption has a perceived positive impact on business performance, including but not limited to market share, products, and customer service, as measured in the research.

A deeper analysis is required to understand why the respondents in the research overwhelmingly state that the influence of ICT adoption has a perceived positive impact on performance, market share, and product and customer service.

DECLARATION

I, Nirindra Chetty, declare that this research report is my own work except indicated in the references and acknowledgements. It is submitted in partial fulfilment of these requirements for the degrees of Master of Management in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Nirindra Chetty

Signed at…….

On the……day of……..2016.

DEDICATION

This work is dedicated to my family.

To my wife, Rolene Joy Chetty, you are truly sent from God. You are my best friend. Thank you for being available to me, for always being understanding towards my study commitments, for always being supportive, and for being my shining light.

To Kyle and Karishma, my children, thank you for keeping me balanced and for always making me look forward to our time together during the past year.

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TABLE OF CONTENTS

ABSTRACT ..... **II**

DECLARATION ..... **III**

DEDICATION ..... **IV**

ACKNOWLEDGEMENTS ..... **V**

TABLE OF CONTENTS ..... **VI**

LIST OF TABLES ..... **X**

LIST OF FIGURES ..... **XIII**

CHAPTER 1: INTRODUCTION **1**

1.1 INTRODUCTION 1
1.2 PURPOSE OF THE STUDY 2
1.3 CONTEXT OF THE STUDY 2
1.4 PROBLEM STATEMENT 6
1.4.1 MAIN PROBLEM 7
1.4.2 SUB-PROBLEMS 7
1.5 SIGNIFICANCE OF THE STUDY 7
1.6 DELIMITATIONS OF THE STUDY 9
1.7 DEFINITION OF TERMS 10
1.7.1 INFORMAL ECONOMY 10
1.7.2 STREET TRADING 11
1.7.3 ICT 11
1.7.4 ICT INTERVENTIONS 12
1.7.5 INFORMAL BUSINESS PERFORMANCE 12
1.8 ASSUMPTIONS 13
1.9 CONCLUSION 13

CHAPTER 2: LITERATURE REVIEW **14**

2.1 INTRODUCTION 14
2.2 THE CONCEPTUAL MODEL 14
2.3 BACKGROUND DISCUSSION 17
2.4 ENTREPRENEURSHIP AND THE INFORMAL SECTOR 25

2.5 PERFORMANCE OF INFORMAL TRADERS 26
2.6 WHAT IS ICT? 29
2.7 DETERMINANTS OF ICT ADOPTION BY THE INFORMAL SECTOR 30
2.7.1 AGE 30
2.7.2 GENDER 31
2.7.3 EDUCATION 32
2.8 THE INFLUENCE OF ICT ON INFORMAL TRADERS 32
2.9 INFORMAL TRADERS AND ICT NEEDS AND CHALLENGES 37
2.10 HYPOTHESES 42
2.11 CONCLUSION OF LITERATURE REVIEW 43

CHAPTER 3: RESEARCH METHODOLOGY 44

3.1 INTRODUCTION 44
3.2 RESEARCH METHODOLOGY/PARADIGM 44
3.3 RESEARCH DESIGN 45
3.4 POPULATION AND SAMPLE 46
3.4.1 POPULATION 46
3.4.2 SAMPLE AND SAMPLING METHOD 48
3.5 THE RESEARCH INSTRUMENT 48
3.5.1 PROCEDURE FOR DATA COLLECTION 51
3.5.2 DATA ANALYSIS AND INTERPRETATION 52
3.6 LIMITATIONS OF THE STUDY 52
3.7 RESEARCH APPROACH 53
3.8 VALIDITY AND RELIABILITY OF THE RESEARCH 54
3.8.1 EXTERNAL VALIDITY 54
3.8.2 INTERNAL VALIDITY 55
3.8.3 RELIABILITY 56
3.9 ETHICAL CONSIDERATIONS 57
3.10 PILOT STUDY RESULTS 57
3.11 CONCLUSION 58

CHAPTER 4: PRESENTATION OF RESULTS 59

4.1 INTRODUCTION 59
4.2 DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE 59
4.2.1 GENDER 59
4.2.2 EDUCATION LEVEL 60
4.2.3 ROLE IN THE BUSINESS 61
4.2.4 BUSINESS START-UP ASSISTANCE 62
4.2.5 ICT UTILISATION 63
4.2.6 RESPONDENT AGE 64
4.2.7 BUSINESS AGE 65
4.2.8 EMPLOYEES 65
4.2.9 MONTHLY TURNOVER 65
4.3 VALIDITY ANALYSIS 66

4.3.1 ICT UTILISATION 66
4.3.2 FINANCIAL PERFORMANCE 68
4.3.3 LEVEL OF SERVICE 69
4.3.4 LEVEL OF COMPETITIVENESS 70
4.4 RELIABILITY ANALYSIS 71
4.5 NORMALITY 72
4.5.1 ICT UTILISATION 72
4.5.2 FINANCIAL PERFORMANCE 74
4.5.3 LEVEL OF SERVICE 75
4.5.4 LEVEL OF COMPETITIVENESS 76
4.6 DESCRIPTIVE STATISTICS 77
4.6.1 ICT UTILISATION 78
4.6.2 FINANCIAL PERFORMANCE 80
4.6.3 LEVEL OF SERVICE 82
4.6.4 LEVEL OF COMPETIVENESS 84
4.7 CORRELATION ANALYSIS 85
4.7.1 CORRELATION BETWEEN ICT UTILISATION AND FINANCIAL PERFORMANCE 86
4.7.2 CORRELATION BETWEEN ICE UTILISATION AND LEVEL OF SERVICE 86
4.7.3 CORRELATION BETWEEN ICE UTILISATION AND COMPETITIVENESS 87
4.7.4 CORRELATION BETWEEN ICT UTILISATION AND IMPROVED VISIBILITY AND PRODUCT/SERVICE INFORMATION 87
4.8 TESTING OF HYPOTHESES 88
4.8.1 H1: FINANCIAL PERFORMANCE AND ICT UTILISATION 88
4.8.2 H2: SERVICE AND ICT UTILISATION 89
4.8.3 H3: COMPETITIVENESS AND ICT UTILISATION 89
4.8.4 H4: IMPROVED VISIBILITY AND PRODUCT/SERVICE INFORMATION AND ICT UTILISATION 90
4.9 CONCLUSION 90

CHAPTER 5: DISCUSSION OF THE RESULTS 91

5.1 INTRODUCTION 91
5.2 DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE 91
5.2.1 GENDER 91
5.2.1 EDUCATION LEVEL 92
5.2.3 TURNOVER AND BUSINESS TYPE 93
5.3 OWNERSHIP AND DEVICES USED 93
5.4 UTILISATION OF ICT AND INFORMAL TRADERS 94
5.5 HYPOTHESIS DISCUSSION 96
5.5.1 HYPOTHESIS 1 DISCUSSION 96
5.5.2 HYPOTHESIS 2 DISCUSSION 97
5.5.3 HYPOTHESIS 3 DISCUSSION 98
5.5.4 HYPOTHESIS 4 DISCUSSION 100
5.6 CONCLUSION 101

CHAPTER 6: CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS 103

6.1 INTRODUCTION 103
6.2 SUMMARY OF THE LITERATURE REVIEW 103

6.3 SUMMARY OF RESULTS 104
6.4 LIMITATIONS 105
6.5 RECOMMENDATIONS AND IMPLICATIONS 105
6.6 CONCLUSION 107

REFERENCES 108

APPENDIX A 117

LETTER TO RESPONDENTS 117

APPENDIX B 118

RESEARCH INSTRUMENT 118

APPENDIX C 124

RESEARCH STUDY CONTROL SHEET 124

APPENDIX D 125

CONSISTENCY MATRIX 125

LIST OF TABLES

Table 1: Informal trader's characteristics (Esselaar, Stork, Ndawalana, & Deen-Swarray, 2007:33) 21

Table 2: Estimated provincial distribution of formal and informal sector activities (DTI, 2008:7) 22

Table 3: Challenges within informal traders (Makoza, 2011:16) 23

Table 4: South African government SMMEs promotion initiatives (Makoza, 2011:18) 24

Table 5: Gender distribution 59

Table 6: Education level distribution 60

Table 7: Business role distribution 61

Table 8: Business start-up assistance 62

Table 9: ICT devices used 63

Table 10: Respondent age 64

Table 11: Business age 65

Table 12: Employees in business 65

Table 13: Monthly turnover 65

Table 14: KMO and Bartlett's test: ICT utilisation 66

Table 15: Total Variance: ICT utilisation 67

Table 16: KMO and Bartlett's tests: Financial performance 68

Table 17: Total variance: Financial performance 68

Table 18: KMO and Bartlett's tests: Service levels 69

Table 19: Total variance: Service levels 69

Table 20: KMO and Bartlett's test: Level of competitiveness 70

Table 21: Total variance: Level of competitiveness 71

Table 22: Cronbach's alpha 72

Table 23: Tests of normality: ICT utilisation 72

Table 24: Tests of normality: Financial performance 74

Table 25: Tests of normality: Level of service 75

Table 26: Tests of normality: Level of competitiveness 76

Table 27: Likert scale: ICT utilisation 78

Table 28: Mean and standard deviation: ICT utilisation 79

Table 29: Likert scale: Financial performance 80

Table 30: Mean and standard deviation: Financial performance 81

Table 31: Likert scale: Level of service 82

Table 32: Mean and standard deviation: Level of service 83

Table 33: Likert scale: Level of competitiveness 84

Table 34: Mean and standard deviation: Level of competitiveness 85

Table 35: Correlation between ICT utilisation and financial performance 86

Table 36: Correlation between ICT utilisation and level of service 86

Table 37: Correlation between ICT utilisation and competitiveness 87

Table 38: Correlation between ICT utilisation and improved visibility and product/service information ……87

Table 39: Regression analysis: H1 88

Table 40: Regression analysis: H2 89

Table 41: Regression analysis: H3 89

Table 42: Regression analysis: H4 ……89

Table 43: Summary of Hypothesis results 105

LIST OF FIGURES

Figure 1: Conceptual Model: The influence of ICT interventions on performance of informal traders towards growth (Boateng, 2011) 15

Figure 2: Structure of the South African economy (Ligthelm, 2006:33) 19

Figure 3: Challenges to ICT adoption by informal traders (Walcott, Mehruz, & Qureshi, 2008:16) 37

Figure 4: Detailed information on the needs of informal trader's operators (Dhingra & Misra, 2004:7) 40

Figure 5: Map of Region E, Sandton (JRA, n.d.) 47

Figure 6: Gender distribution 60

Figure 7: Level of education 61

Figure 8: Business role distribution 62

Figure 9: Business start-up assistance 63

Figure 10: ICT device used 64

Figure 11: Histogram: ICT utilisation 73

Figure 12: Histogram: Financial performance 74

Figure 13: Histogram: Level of service 75

Figure 14: Histogram: Level of competitiveness 77

CHAPTER 1: INTRODUCTION

1.1 Introduction

Rapidly rising unemployment has become a feature of many developing economies in the world as indicated by the United Nations, in their report World Economic Situation and Prospects (UN, 2015). Many governments have prioritised employment creation as a pillar of their economic policies. Since the 2008 financial crisis, there has been a decline in the number of jobs created in the formal sector. This has been coupled with fast growing populations, rapid urbanisation and an increase in the number of young people who are jobless.

Widespread poverty and economic difficulties in many parts of the developing world have resulted in conditions where citizens have to be self-reliant, with the result that many have opted to take part in the informal sector, just to make ends meet.

With this limited capability by the formal sector to generate sustainable employment, a shift has moved towards the informal sector to assist in generating sustainable employment and thus reduce unemployment. Currently, the informal sector is a key constituent of many economies in sub-Saharan Africa.

Marnewick (2014) opines that the contribution that small-scale businesses make in generating employment is universally recognised. In the South African context, Marnewick (2014) suggests that a healthy and much expanded small business community could be the keystone of a new deal for South Africa. As such, the informal sector becomes vital in assisting in the rise and growth of small businesses, which if successful can become formal, hence playing a key role in both local and national economies. The recognition that the informal sector has become an indispensable part of both urban and rural economies requires that the sector be supported so that it can become more efficient, resulting in improved incomes for those involved.

The rapid growth of information communication technology (ICT), coupled with efforts aimed at bridging the digital divide between rural and urban areas, and between the formal and informal sectors, means that attention has to be paid to how ICT can be used to support this process. This could result in employment creation, income generation and poverty alleviation as indicated by the Gillwald, Moyo and Stork (2012) in their policy paper.

1.2 Purpose of the study

The purpose of this research is to establish the relationship that exists between the intervention of ICT usage and adoption by informal traders in the Sandton region and its perceived impact on business performance. The anticipated objective is to assess whether ICT interventions, within informal traders operating within the Sandton region, will have a positive or negative business performance outcome for this sector of the economy.

1.3 Context of the study

Over the past 22 years, there has been a significant economic shift from a manufacturing economy into a service-orientated economy, which has resulted in an escalation of peripheral employment and thus an increase in entry-level informal businesses. There has also been a significant decrease over the years of male labour participation in the traditional formal, white-collar industries.

In South Africa, the economic background is controlled by two coexisting economies, designated as the first and second economies, in which the first economy consists of the traditional urban economic activities, which are formal and are subject to legal rights and protection. The second economy is the less advantaged, either in semi-urban areas or on the periphery within urban areas, and informal.

There have been contestations in the description of the definitions of the first and second economies. Devey, Skinner and Valodia (2003:2) posited that the second

economy is not just a name for the informal economy, but includes the unemployed and those that are not economically active.

Du Toit and Neves (2007:151) argued that while the first economy could be considered as “modern’ i.e. western oriented and globally integrated”; they viewed the second economy as being negatively defined because the opinion among policy makers was that it consisted simply of those phenomena and activities that were not part of the first economy.

Frye (2007:178) on the other hand stated that the first economy was described as being strong, robust and internationally competitive, while the second economy was viewed as being mainly “informal, marginalised, unskilled and consist[ing] of the unemployed and those who are unemployable”. The implication of this was that the second economy was a sink whose role was to absorb those who could not fit into the formal sector.

Unemployment in the formal economy, which continues to persist at high levels in South Africa, with approximated figures of over 25 percent in 2012 (Stats SA, 2013), is a major concern, with the greatest impact being the youth, with more than half of South Africans between the ages of 15 and 24 years being unemployed. Interestingly, the informal economy is an oasis of employment to many people, with various estimates from 12 percent to 33 percent of employment (Kraemer-Mbula & Tau, 2014).

It has been acknowledged that the informal sector is continuing to provide employment (Stats SA, 2013; Adcorp, 2013) and it has been suggested that without the informal economy, the unemployment rate would rise from currently 25 percent to 47.5 percent (SALGA, 2012). The unemployment situation could be solved there was improvement in the informal sector so that linkages could be established between the formal and informal economies.

These marginalised population businesses are predominately made up of the informal sector, which is regulated by municipalities’ by-laws and informal organisations. The co-existence of these two economies is inter-woven in the

socio-economic activities and is the key component of day-to-day product and services activities.

With the current high unemployment rate at 25 percent (Stats SA, 2014) in South Africa's, the formal economy, which is not providing employment opportunities to a large segment of the population is also not addressing poverty alleviation (Kraemer-Mbula & Tau, 2014).

Because of these shifts, there has been an increased interest in informal economic participation by the South African population. Several factors are also influencing how informal economies can become more competitive in all areas of the economy including the urban and rural spheres.

Since 1994, there has been a significant migration of people from the rural areas into the urban centres. This has made it easier for informal traders to interact with one another without needing to be in one specific location. One of the key enablers for informal economies has been attributed to the role of ICT (Modimogale & Kroeze, 2009).

The rapid technology transformation of South Africa since 1994, and the future technology growth of this country's ability to connect economic activities for growth, is the critical link for both formal and informal businesses. Formal businesses have easy access to ICT; however, many of the informal economies face various challenges in developing and growing their informal businesses due to the lack of ICT access, infrastructure and capabilities. ICT has the capability to enable the relatively easy movement of information, thus has been expedited through ease of access and digitisation of many business administration tasks.

The world has moved into a knowledge-based economy, which entails that businesses utilise and transact knowledge as part of a value exchange. The main attribute for business performance is acknowledgement by businesses that this information will achieve high levels of efficiency and effectiveness through ICT (Modimogale & Kroeze, 2009:505).

Capability is meant to have the correct devices to access ICT services, such as having access to Wi-Fi/3G services, and understand how to use the services effectively. Although South Africa is a developing country, the adoption of ICT utilisation, such as cell phones, by informal economies is widely known; however, there is room for a better understanding of the impact of the intervention of ICT usage within informal economies on business performance. In this regard, South Africa provides an interesting context to explore the economic ICT issues, specifically accessibility, affordability and capability, intersecting informal trade.

A few large companies (local and multinational companies) have control over the ICT costs, accessibility and infrastructure and dominate the formal ICT providers. An emergence of small, ever-growing ICT providers have created a competitive market, which has slashed ICT access from the traditionally large companies, as indicated by Gillwald et al. (2012).

South Africa has four mobile operators: Cell C, MTN, Telkom Mobile, and Vodacom and one virtual network operator: Virgin Mobile. Pricing is the key indicator of the competitiveness of the South African ICT markets. In South Africa however, very little pricing transparency allows for limited assessment by consumers or even the regulator of mobile communication prices. South Africa is ranked only 32nd out of the 46 countries for which prepaid mobile pricing data in Africa was available on the web (RIA, 2012). These companies however are only providing their ICT access and coverage in the urban areas of South Africa, thus excluding a large portion of informal traders' access to this opportunity.

It is important to note that informal traders play a key role of not only providing a form of employment and livelihood to marginalised segments of the population, but also providing a livelihood to the formal and services sector through their purchases from suppliers, manufacturers, retailers and service providers, including the large ICT providers. These informal businesses target a large existing demand for cheap, affordable consumer goods, which is mostly overlooked and misunderstood in the formal economies.

The study should also contribute positively to informal entrepreneurial research by demonstrating how ICT and its attributes can be used as an essential enabler to improve business performance, thus becoming a necessary requirement for new entrants into the informal economy.

1.4 Problem statement

The use of ICT has been recognised as a key contributor to improving business performance and enabling informal economies to be competitive (OECD, 2007). Most studies on ICT and the informal sector tend to concentrate on general usage of ICT devices in the lives of informal traders without specifically linking them to the business (Chew, Illavarasan & Levy, 2010; Gikenye, 2014; Gillwald, Deen-Swarray, Moyo & Stork, 2013;). There have also been studies on the use of mobile phones in specific sectors of the informal economy (Kaba, N'da, Maso & Mbarika, 2009; Opiyo & K'Akumu, 2006).

Motsoeneng (2014) examined the effects of ICT applications on SMEs in the manufacturing sector in South Africa in general. There have been no specific studies investigating the perceived improvement in performance by adoption of ICT on the sector in a particular locale. This study hopes to fill this gap, in addition to the gap in the literature on how ICT adoption by small-scale traders influences the performance of informal sector operations within South Africa, in particular the Sandton region.

It is envisaged that ICT interventions for informal traders in the Sandton region could contribute to improved competitive advantage that could create jobs, stimulate new entrants, alleviate poverty, improve the lives of informal traders, owners and staff, and move towards to formalisation.

1.4.1 Main problem

The main problem statement addressed in this study was to examine ICT interventions and their effect on the performance of informal traders in the Sandton region.

Following the review of the relevant literature, the main problem was elaborated into two sub-problems; thereafter, corresponding research questions and hypotheses were formulated.

1.4.2 Sub-problems

The first sub-problem was to identify the influence of ICT interventions on informal traders in the Sandton region.

The second sub-problem was to evaluate the perceived impact of ICT interventions on the performance of the informal traders in the Sandton region.

1.5 Significance of the study

Previous research on the informal sector in Johannesburg has concentrated on opportunities and constraints (Devey et al., 2003; Willemse, 2011). A plethora of studies exists on linkages between the informal and formal sectors (Devey et al., 2003; Valodia & Devey, 2010).

Lund and Skinner (2005) reflected on the creation of positive business environments in South Africa, while Motala (2002) looked at the organisation of informal traders by concentrating street trading in South Africa. Studies on the influence of ICT on overall business performance of informal traders in South Africa are lacking.

The significance of the study then was that it would be able to provide knowledge about the influence of ICT intervention by informal economies and the perceived effect this influence had on the performance of informal traders.

Since this study sought to understand the role of ICT intervention on business performance of small-scale informal activities, knowledge gained would foster growth and productivity in the sector.

The small-scale businesses in the informal sector are characterised by features such as low initial capital requirements for investment, limited resources coming from the informal economies, or finance by extended family members rather than financial institutions.

Their day-to-day operations rely on walk-in trade, word of mouth, convenience trade, friends and social networks, and marketing relies heavily on the location of the physical stand or operational area, rather than any formal marketing plans or strategies.

Understanding how these activities can be improved by the introduction of ICT should enable expansion of these businesses so that they can play a significant part in employment creation and income source diversification for the participants.

Many informal businesses have limited growth prospects due to their small-scale activities, dependency on unskilled labour, poor infrastructure, lack of security, lack of access to credit, unfavourable regulatory framework and lack of ICT accessibility (Litondo & Ntale, 2013). This has an impact on their performance and ability to generate sufficient incomes for the participants.

This study investigated first, the current influence of ICT knowledge, accessibility, capability and utilisation, and second how ICT can be leveraged to contribute to the growth of these businesses, and in the process lead to their formalisation.

The informal sector in this region consists of a wide range of economic activities such as food vendors, street/'traffic light' vendors, waste/recycling collectors, retail stall vendors, including construction site vendors and workers.

Understanding how ICT can improve performance for such a diverse range of informal sector activities should be important in understanding how the sector

can be streamlined to enhance its growth, and in the process be formalised into the mainstream economic sector.

Although it is acknowledged that informal trading does have a positive development impact on job creation and makes a contribution to the city of Johannesburg's economic revenue (COJ, 2006) this sector is perceived to lack ICT knowledge when it comes to informal traders growing and sustaining their businesses (Tamilika Consulting Services, 2009).

This lack of ICT knowledge is having an impact on the sectors performance, income and employment creation. Mainstreaming the role ICT can play in the sector into policymaking can lead to a better understanding of the sector and thus enable the creation of environments conducive to the operation of the sector.

The South African informal business sector comprises small, unregistered businesses, which are characterised by a range of commercial activities. Charman, Petersen, Piper, Liedeman and Legg (2015) observed that individuals operate these business entities, either alone or with the assistance of family members or friends.

It was the intention of this research to provide a perspective on ICT interventions, and the positive or negative affect on performance.

1.6 Delimitations of the study

This research only focused on informal traders in the Sandton region of Johannesburg and thus excluded informal traders operating in other regions of Johannesburg.

The choice of the Sandton region for the study was influenced by the fact that many studies on informal traders on the Johannesburg CBD and Soweto have already been done (Devey et al., 2003; Marnewick, 2014; Motala, 2002 Woodward, Rolfe, Ligthelm & Guimaraes 2010).

Sandton is a busy urban hub in Gauteng and hosts many local and international corporate institutions. It is also a major financial hub in South Africa. In addition, it has a thriving informal sector, with a large informal settlement (Alexandra) located nearby. The area has the characteristics of both the first and second economies, hence was ideal for studying ICT and the perceived performance in the informal sector.

This research excluded small and medium enterprises (SMEs) and enterprises registered with Companies and Intellectual Property Commission (CIPC), thus the research will limited to informal traders. The term informal economy (McCrohan & Smith, 1986) has also been called the irregular economy (Ferman & Ferman, 1973).

1.7 Definition of terms

1.7.1 Informal economy

According to Chowdhury (2005), the term informal economy was used instead of informal sector at the 90th session of the International Labour Conference in 2002. Devey et al. (2003) stated that the term economy implies a broader range of activities than the term sector and that if formal and informal activities are seen to be part of the economy, then it is easier to see that connection between the two.

The informal economy has its own forms, rules and practices and be organised according to hierarchical, religious and family relationships. There is also a need to differentiate between enterprises that are survivalist and those that could benefit from business development policies.

According to the Organisation for Economic Co-operation and Development (OECD, 2007), informal economy is defined as individuals that engage in the production of goods or services with the main objective of generating employment and income for themselves. They more often than not, operate on a

small-scale, with little or no distinction between labour and capital factors of production.

According to Devey et al. (2003), informal activities are as a result of the 'informalising' of formal firms. Informal activities include the following:

- Different types of economic activity, such as trading, collecting, providing a service, or manufacturing;
- Different employment relations such as the self-employed, paid and unpaid workers, as well as disguised wage workers; and
- Different economic potential such as survivalist activities and successful small enterprises (Devey et al., 2003).

Devey et al. (2003) goes on to state that the formal and informal economies are highly integrated, as it is in rare occasions that informal traders or operators are not connected to the formal economy through supply or customer networks.

1.7.2 Street trading

Street trading is defined as the act of selling goods or services on the street, on pavements, in the middle of the road, or in public spaces, undertaken by a street trader or street vendor in an activity that forms part of informal trading (Tissington, 2009). In the South African context, informal traders can sometimes be referred to as hawkers or micro retailers.

1.7.3 ICT

For the purpose of this study, ICT is defined as the utilisation of technology that enables the processing, transferring and communication of information, in a digital format, which is utilised for productivity of advanced usage and the application of administrative support functions (Modimogale & Kroeze, 2011; Pierson, Baelden, Lievens, & Marsigny, 2009; Zuppo, 2012).

1.7.4 ICT interventions

This study considers ICT interventions to be technology that facilitates communication and the processing and transmission of information by electronic means (Zuppo, 2012). ICT is often divided into ‘old’ and ‘new’ technologies, with an emerging sub-set of ‘innovations’ or ‘high end applications’.

In the same way as ICT is not clearly defined, the concept of ICT in business is also open to some variation in interpretation, primarily between direct tele-business, delivery practice and more overarching business communication and development sector utility (Marker, McNamara & Wallace, 2002).

The term ICT intervention can be used to define the creation and capturing of economic value through exploring and exploiting new technology-based solutions (Theron, 2007).

1.7.5 Informal business performance

There is lack of agreement on a definition of business performance for informal traders, which might create confusion and clarifies the limits for generalisation of term. From an operations perspective, business performance is perceived as a “set of metrics used to quantify both the efficiency and effectiveness of actions” (Neely, Gregory & Platts, 1995:81) or as a reporting process that gives feedback to owners of businesses on the outcome of actions (Bititci, Carrie & McDevitt, 1997).

Businesses are in existence not only to offer a service for a particular target market, but also to ensure that the execution of that service offering is conducted in a profitable manner. In essence, a business should strive to excel in maximising its output with the most efficient use of input resources at its disposal, to obtain this maximum profit.

1.8 Assumptions

The following assumptions were made regarding the research:

- All respondents in the research knew what ICT entails, and about the utilisation of its capabilities in business. The importance of this was that respondents completed the paper-based questionnaire with some contextual understanding of what ICT can deliver to their business and its perceived impact on performance.
- The respondents had the required information and were willing to share this information;
- The respondents numbers were sufficient to allow for the analysis of the data; and
- The respondents consented to the use of the information for research purposes.

1.9 Conclusion

This chapter introduces the study by discussing the importance of the informal traders in the economy. The statement of the problem, objectives and rationale of the study are provided, including a definition of key terms that are employed in the study.

The context and purpose of the study is posited. In addition, the delimitations and assumptions made by the study are discussed. The next chapter provides a theoretical and conceptual basis of the study.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter provides a theoretical basis for the study by examining the main constructs of ICT intervention in relation to informal businesses. The chapter begins by providing a conceptual model on the influence of ICT interventions on the performance of informal trader's growth. It then moves on to examine the factors that influence ICT interventions in informal traders, and how usage by these interventions ultimately has an impact on performance.

A discussion on the study background and clarification of key concepts that are related to the research questions and hypotheses is also included in this chapter.

2.2 The conceptual model

Informal traders may use ICT platforms such as mobile phones during pre-trade purchases from suppliers or post-trade activities such ordering additional stock and products.

The conceptual model in Figure 4 shows that informal businesses can adopt ICT in a wide range of their daily operations, which will lead to financial and operational benefits, which in turn will lead to increased revenue, more streamlining of operations and consequently a reduction in operational costs.

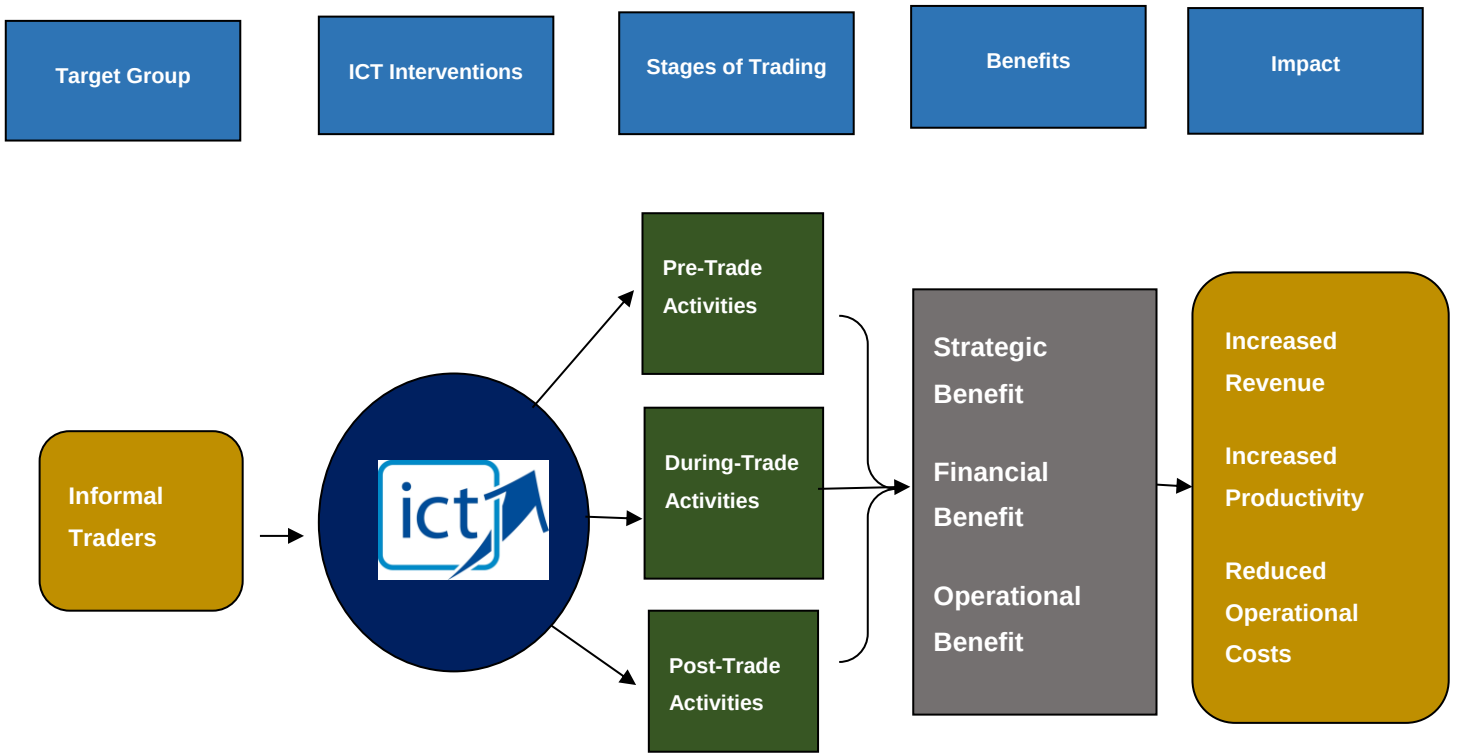

Figure 1: Conceptual Model: The influence of ICT interventions on performance of informal traders towards growth (Boateng, 2011)

Boateng (2011) considers this adoption of ICT by the informal sector as being the key to improving efficiency and business performance of the sector.

There is a need for the introduction of people-orientated and complexity aware ICT interventions in existing informal businesses to create operational advantage and income benefits for sustainability and growth. The impact of competition by other traders may force informal traders to adopt interventions, such as ICT technology, so that they can not only survive, but also compete with other informal traders.

Literature on the particular role ICT can play in increasing performance in the informal sector has been lacking. These informal businesses are non-static so the evidence from the survey also needs to show whether accessibility to wireless technology such as Wi-Fi does have long-lasting business efficiency gains that will help these economies to become sustainable and grow into micro enterprises and beyond.

According to Bhagwat and Sharma (2006), the information flow in business is the lifeblood of the business no matter what size it is and thus the addition of technology has had an impact on the way a business operates. Understanding how this information flow can be enhanced becomes vital in the realisation of how adoption of ICT by the sector can improve performance and in the process increase income and efficiency.

This research sought to investigate and analyse the understanding of the mechanism of ICT business knowledge assumptions by informal traders. Furthermore, it sought to develop an understanding of the ICT barriers that hinder the performance of informal traders for growth as well as the identification of business ICT activities – knowledge, learnings, application flows, technology enablers and technology disablers for these informal traders. The study also recorded and analysed the main ICT interventions currently being utilised by informal traders in the Sandton region.

According to Heeks and Duncombe (2001), poor decision-making is a constant feature within informal businesses that rely exclusively on informal information.

The use of ICT alone is not the answer; businesses that rely only on formal information can go out of business very quickly.

A conclusion can be made that that mixing informal and formal information is the route to take, a process of moving from the traditional methods to the modern technology driven ways of communication. This can be achieved through establishing linkages between the formal and informal economies.

2.3 Background discussion

The definition of the term informal business was proposed at the 15th International Conference of Labour Statistics held in January 1993 (ILO, 1993), and it was recommended the sector be defined in terms of the following criteria:

(1) Non-registration of the enterprise in terms of the legislation, such as taxation and or other commercial legislation;

(2) Non-registration of employees of the enterprise in terms of the labour legislation; and

(3) Small size of the enterprise in terms of the people involved.

According to Williams and Nadin (2010), the informal entrepreneur is a person involved in starting a business, or is the owner of a business for less than forty-two months, and is participating in the production and sale of goods and services and that it is unregistered or hidden from paying taxes.

An important reason for individuals' deciding to work for informal businesses is that it is difficult for them to find a job in the formal sector (Dobson & Ramlogen, 2012). The Global Entrepreneurship Monitor (GEM) report of 2013 (Amoros & Bosma, 2014) stated that entrepreneurs are those people who see opportunities in their environment, have the capacity to start a business and are undeterred by failure. The informal sector entrepreneurs fall into this category because they are able to discern income-making opportunities in particular areas and set up businesses, even if it is the survivalist aspect that drives them to do this.

The 2013 GEM report (Amoros & Bosma, 2014) points out that societal attitudes, such as the perception of good opportunities, and whether the individuals wanting to set up entrepreneurial activities think that they have the capabilities to start a business, have a great effect on whether or not people will enter the informal sector.

Although the main reason people resort to the informal sector is the need for income; the fact that not everyone who is unemployed goes into the informal sector is a reflection that one has to have an entrepreneurial spirit to do so.

In South Africa, among individuals between 18 and 64 years of age, only one third thinks that there are good opportunities to start a business in the country (Amoros & Bosma, 2014). The report further states that a quarter of young people between the ages of 18 and 34 years believe that they have the skills and knowledge to start a business and that there are good opportunities to exploit for business. This indicates that although the informal sector is easy to enter, many people perceive that opportunities may be lacking and that there will be barriers to running their enterprises successfully.

Age is an important determinant for participation in both formal and informal economies. The literature review determined that people between the ages of 31 and 35 would be the most active in informal sector activities (Opiyo & K'Akumu, 2006). This could be because at this age most are have already established their families and hence have to find ways and means to support these families.

There are gender related issues that relate to participation in the informal economy. The literature review indicated that most informal sector activities tend to be male dominated except for retailing, salons and eateries (Gikenye, 2014; Opiyo & K'Akumu, 2006; Turton & Herrington, 2013). The GEM report of 2012 (Turton & Herrington, 2013) reported disparities between the prevalence of men and women in entrepreneurship. The report concluded that in South Africa this disparity was higher than elsewhere. More men than women participate in informal sector activities. Jiyane and Mostert (2010) determined that most women participating in informal sector activities were between 40 and 49 years

of age. At this age, the women are still potentially strong and have more responsibilities of looking after and providing for their families.

As indicated, a proportion of the unemployed South African population have entered the informal economy because they cannot find jobs or are unable to start businesses in the formal economy (Davies & Thurlow, 2009). Work in the informal economy cannot be deemed decent in comparison to the protected, recognised and secure, employment found in the formal economy.

South Africa has an extensive informal economic sector that creates and generates a diverse and opportunistic platform for entrepreneurial development into the formal sector. The role of the informal sector in the overall economy is illustrated in Figure 2.

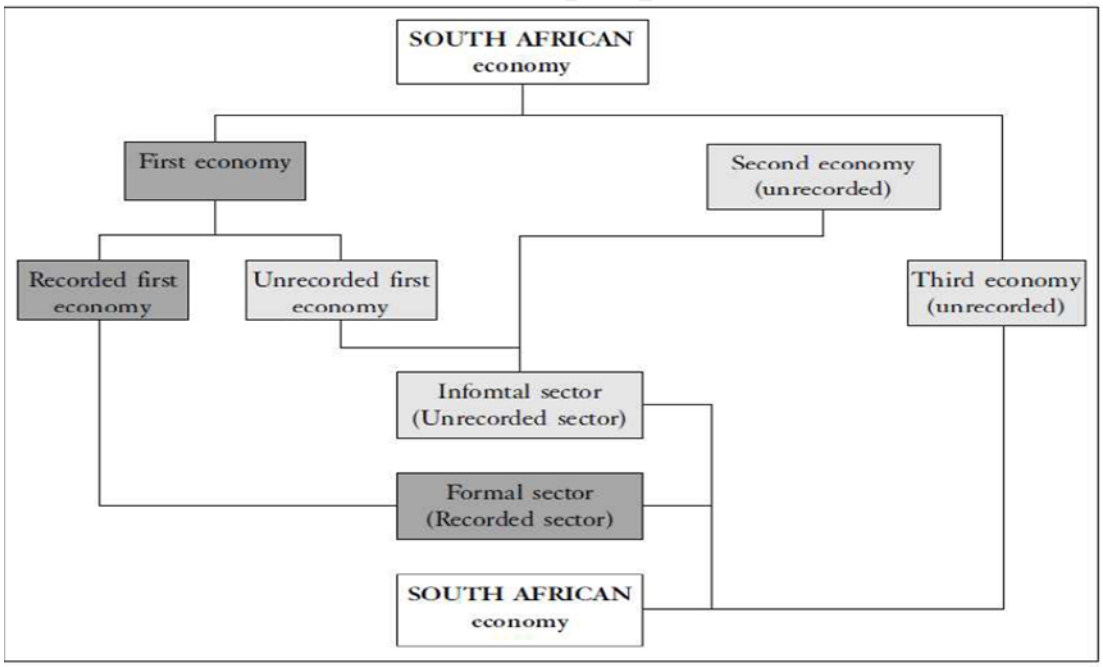

Figure 2: Structure of the South African economy (Ligthelm, 2006:33)

Many unemployed individuals find that informal trading is an attractive source of income as it is relatively easy to enter, it requires minimum capital and equipment, it can accommodate a one-person operation, and it does not require a formal skill set (Charmes, 2000).

However Du Toit and Neves (2007:163) cautioned that although informal sector traders' activities often seem to be "vital for survival, in most cases they are perilously marginal and often fragile". Du Toit and Neves (2007) argued that most informal trader's operations appear to rely heavily for their survival on economic activities that, under careful consideration, seem to offer vanishingly small economic rewards.

Du Toit and Neves (2007) provide the example of selling cooked sheep's heads – an activity that takes hours of arduous dirty and unpleasant work for only R10 profit per head. Another example is selling individual sweets and single cigarettes at a very small profit margin. All these activities seem barely sustainable or profitable, yet they are the only means of survival for many unemployed people.

The 2014 GEM report (Singer, Amoros & Moska, 2015:51) observed that South Africa has one of the lowest levels of early stage entrepreneurial activity in all Sub-Saharan African countries, being only at 25 percent of the rate of all other African countries. The report also indicated that the country has one of the lowest levels of both perceived opportunities and perceived capabilities in the region.

This shows that not many people will resort to setting up their own businesses, compared with people in other African countries. The characteristics of the informal economy are explained in Table 1.

Table 1: Informal trader's characteristics (Esselaar, Stork, Ndawalana, & Deen-Swarray, 2007:33)

Type	Characteristics
Informal sector/ Survivalist	• No employees • No distinction between personal and business finance • Does not keep records • Does not pay taxes • Is not registered with any authority • Engages in business activity to pay for daily expenses
Informal operator/ Macro or small business	• Less than 10 employees • No distinction between personal and business finance • May not keep records • May not pay taxes • May not be registered with any authority • Has physical address
Formal micro or small business	• Between 10 and 49 employees • Keeps records • Has separate bank accounts • Pays taxes • Is registered with all required authorities • Has physical contact details

It is important to note that though the entrepreneurs in the informal economy do not pay direct taxes or municipality taxes, national and local government are expected to provide some access to services such as ICT, basic infrastructure, and business tools, which will then need to be financed largely from the formal economy tax base in South Africa.

Most formal and informal sector activities take place in Gauteng. Table 2 shows that large informal sector activities are to be found in Gauteng and KwaZulu-Natal. This is an indication that the sector is to be found growing in areas where there are large populations.

Table 2: Estimated provincial distribution of formal and informal sector activities (DTI, 2008:7)

Province	Formal sector 2007 (percent)	Informal sector 2005 (percent)
Eastern Cape	5.3	13.4
Free State	3.2	6.6
Gauteng	48.3	24.6
KwaZulu-Natal	13.0	18.8
Limpopo	2.9	14.3
Mpumalanga	4.1	7.7
Northwest	3.2	8.0
Northern Cape	1.2	0.7
Western Cape	19.0	5.9
Total	**100 (512518)**	**100 (1747578)**

The informal sector is faced with numerous challenges, which have to be addressed for the sector to improve its performance. The challenges are summarised in Table 3.

Table 3: Challenges within informal traders (Makoza, 2011:16)

Category	Examples of Challenges
Resources	Less income, lack of collateral, lack of infrastructure and premises and poor working conditions for employees
Capacity	Low literacy levels, lack of business skills, lack of managerial skills and lack of training opportunities
Regulation	Compliance with regulatory and legislative conditions and formalisation requirements
Support	Awareness of support services, lack of access to business advice and lack of acceptance in the communities

At the same time, to improve rights and protection in the informal sector, governments need to invest heavily in the structures of good governance to ensure enforcement of contracts, protect property rights, and enforce social stability.

In South Africa, informality suppresses the efficient use of resources and improvement in productivity, and as a result, the economy functions below its potential with negative effects on rates of economic growth. Thus, to aid development is the need to merge informal economic paths into the formal economic path with such interventions as ICT (ILO, 2002).

It is encouraging to note that the South African government has come up with several initiatives and measures designed to support the informal sector. These are summarised in Table 4.

Table 4: South African government SMMEs promotion initiatives (Makoza, 2011:18)

Initiative	Focus	Main objective(s)
Accelerated and shared growth initiative for South Africa (AsgiSA)	National	Support SMMEs business start-up through capital financing
Growth, employment and redistribution (GEAR)	National	Create employment and generate household income through SMME support
Ntsika enterprise promotional agency	National	Support SMME businesses through non-financial services
Small enterprise development agency	National	Support SMMEs through training, funding and business advice
South Africa micro-finance apex fund (SAMAF)	National	Provide support for access to finance for Microenterprises
Khula	National	Support SMMEs in accessing finance services
Real enterprise development (RED) door programme	Municipal	Small business formation support through funding and training

The South African government has put in place a number of policies and white papers to drive small business development as well as encourage private sector development that will lead to positive business performance (DTI, 2005). However, the informal economy has lacked development, especially in skills and technology assistance and capabilities.

Formal businesses in South Africa cannot absorb the ever-growing number of new entrants into the formalised labour market on a yearly basis. With the GDP growth rate for 2014 being below three percent (Stats SA, 2015), those entrants who cannot find job opportunities in the formal sector then turn to the informal economy to generate income and a livelihood, which in most cases have similar business offerings (Morris, Jones & Nel, 1997).

There are however informal traders that operate purely a means for survival, while many other informal businesses have seen a gap in the market and pursue these opportunities to make a sustainable livelihood.

Another common feature of these traders is the selling of similar goods and services, which seem to reflect a copycat mentality where traders offering the same goods and services operate in close proximity to each other. This is a common aspect found in other developing economies (Chan, 2008), especially with street vendors.

The ICT level of informal traders can be reflected as a number of technological capabilities and requirements to store, build value, apply knowledge, and create abilities and information management.

The influence of ICT contributes many possibilities for informal businesses in communicating and exchanging information and has revolutionised the way these business owners and employees live and conduct businesses along with other associated activities (Barnett, 1996; Norrish, 1998).

Local markets offer limited business opportunities and often lack the business tools needed to communicate directly with local markets buyers and suppliers; the informal business has no alternative but to rely upon intermediaries to transact to make those limited business opportunities optimal.

It is then easy to understand why there is a demand for ICT interventions such as communication tools by informal businesses operating in these environments (Barton, 1999).

2.4 Entrepreneurship and the informal sector

The informal sector, in many areas, provides critical economic opportunities for low-income people. The service has been expanding rapidly due to the shrinking of formal sector jobs, retrenchments and the negative down turns that have been associated with most economies. This has led to many people opting to make a living from the informal sector, which offers a wide range of services. Internationally, trade barriers are falling, with larger free trade zones being created, with goods and services flowing globally and taking no account of country borders. The increase of ICT availability, capability and accessibility are

driving the technology shifts in the global economy, especially in the geographic economic centres.

This has created possible room for the emergence of entrepreneurship, which can start at the informal level, have linkages with the formal sector, and grow to become profitable and if possible be formalised. The importance of entrepreneurship in economies has been emphasised by Herrington, Kew and Kew (2009) in their GEM report. The report quotes Sir Richard Branson of Virgin Group saying that entrepreneurs are the driving force for growth in economies around the world. This is because entrepreneurs have "the ability to see opportunities, to see order among chaos where others see only issues, problems and disorganisation, hence helping transform communities and economies" (Herrington et al., 2009:12).

As mentioned earlier in this literature review, the formal sector has proved incapable of providing employment to the burgeoning pool of young people who are completing school and tertiary qualifications. Herrington et al. (2009) argue that small, medium and micro-enterprises represents an important vehicle to address the challenges of job creation, economic growth and equity in a country like South Africa. Hence, the informal sector can act as a springboard for becoming an entrepreneur. As Herrington et al. (2009:15) contend, a culture of entrepreneurship could unleash the economic potential of all people in South Africa.

2.5 Performance of informal traders

It has been recognised that the formal and public sector have been unable to provide enough jobs for the fast growing and expanding urban labour force in South Africa. Attention has shifted to the role that informal businesses can play in helping redress the employment creation problems that the country faces.

The 2014 GEM report (Herrington et al., 2015:52) however cautions that entrepreneurial activity in South Africa, although still very low, has increased only marginally year on year over the last decade.

Losby, Else, Kingslow, Edgcomb, Maln and Kao (2002) view informal traders as being able to provide the poor and marginalised with opportunities to earn an income. The promotion and support of the informal sector is hence vital. This is because the informal sector is an important survival strategy for the poor and marginalised.

Losby et al. (2002) identified characteristics of informal traders, which may influence the sectors performance. These include:

- *Education*: Many of the participants in the informal sector lack basic education and language skills. This includes soft skills such as problem solving, negotiation for better deals etc. The education factor will impact on their ability to utilise ICT;

- *Skills training*: They lack access to occupation skills. The most profitable endeavours in the informal sector require some skills such as welding, motor mechanics etc., which affects many participants' entry into profitable informal sector activities; and

- *Location*: Due to metropolitan by-laws, many of the informal sector activities are pushed to the periphery of urban areas. This applies particularly to services that need a fixed location. However, informal sector participants are able to by-pass this by constantly being on the lookout as they carry out their businesses.

Losby et al. (2002) identified linkages between formal and informal economies that are able to play a key role in fostering growth, employment and development. These include the informal marketing chains, the informal supply chain, construction and repair services and small-scale manufacturing:

- *The informal marketing chains*: Can be used by industries to eliminate costs involved in maintaining permanent sales staff. This can be done by supplying the informal traders directly with goods, which they can then sell to their customers.

- *The informal supply chain*: Workers can supply inputs to local buyers, who in turn will sell the products to informal traders.

- *The construction and repairs sector*: There can be informal sub-contracting to allow firms to maintain a relatively small and regular labour force.

- *The manufacturing sector*: Can use sub-contractors, which will rely on casual workers who are nominally self-employed.

These linkages can assist informal sector growth, and in the process gain some aspects of formalisation while creating jobs and income opportunities in the process.

Losby et al. (2002) observe that some informal sector activities have created strong economic inputs for individuals involved in the sector. This suggests that the government has an important role to play in supporting these entrepreneurial endeavours in terms of policy and regulation.

Furthermore, Losby et al. (2002) argue that a positive official posture towards the sector, coupled with training, market support and mentoring can result in overall job creation and income opportunities. There is a need for policy support for the informal sector, especially in areas characterised by high unemployment and poverty. This is needed in areas where ‘sub-economies’ in the form of informal sector activities have emerged. They emphasise that these sub-economies are a vital, socially desirable response to situations dominated by high unemployment and poverty. The informal sector activities will help to stabilise low-income communities and generate resources that can be circulated inside these areas Losby et al. (2002).

2.6 What is ICT?

The adoption and use of ICT by the informal sector can be used to make the enterprises set up in this sector more profitable by enabling the access of vital information needed.

As defined earlier, ICT is the utilisation of technology that enables the processing, transferring and communication of information in a digital format to enhance productivity and support daily functions of the user. According to Marnewick (2012), the concept of ICT is broad and can apply to any communicative device or application including radio, television, cellular phones, computer networks including hardware and software, as well as services and applications associated with the communicative media.

UNESCO (2002) defined ICT as “the combination of informatics technology with other related communication technologies”. On the other hand, Perron, Taylor, Glass and Margerum-Leys (2010:67) view ICT as “broad technologies used for collection, storage, manipulation and transfer of data by electronic means, including email, SMS, video chat and social media”. They further argue that ICT is a requirement rather than an option for enhancing business and personal performance.

It is crucial to view ICT in the context of its ability to create greater access to information and communication, especially for underserved populations, than on the technological gadgets themselves. In this study, ICT was confined to mobile and other hand held communication devices like tablets and phablets used by people involved in informal sector activities in the Sandton region.

The reason for this is that mobile phones and tablets have become the ideal means of communication for many people in the country. Kaba et al. (2009) observe that in many developing countries telephony is now available to most people.

They further note that even the lowest income populations now own handsets and can subscribe to receive private services from cell-phone operators. Wakari

and Ochollah (2010) contend that mobile phones have out-diffused virtually every prior communication technology, including computers and the internet.

This lies in the potential and ability of technology to use and share information. The mobile phone as an easily available means of communication that has become a central device associated with business communication practices within the formal and informal sectors (Kaba et al., 2009).

The mobile phone as a component of ICT that is easily accessible, can be leveraged to assist informal sector operators improve their businesses. Boateng (2011:48) supports this by arguing that the rapid diffusion of a relatively low-cost technology should spur a development agenda that focusses on how the mobile phone can be harnessed more effectively for socio-economic development, especially in resource-poor contexts.

2.7 Determinants of ICT adoption by the informal sector

2.7.1 Age

Even though people of all ages are found in the informal sector, Opiyo and K'Akumu (2006:248) state that the highest percentage of people participating in the informal sector was between the ages of 31 and 35 years, closely followed by those in the 25 to 30 year bracket. The age bracket with the least representation was 50 to 55 years.

Opiyo and K'Akumu (2006) argue that the dominance of the sector by young adults is expected, as this age group has the greatest potential for economic upliftment, and is always eager to adapt to modern ways of doing things. Awa, Emecheta and Ukoha (2014) suggested that age is important in the adoption of new technologies.

Younger people have a greater proclivity to adopting new technologies, when compared with older people. ICT, being a relatively new technology, will be easily

adopted by this age group as people are better positioned to ICT as a means of improving their businesses and uplifting themselves financially.

The GEM 2014 report (Herrington, Kew & Kew, 2015) revealed that only 40 percent of young people in South Africa would prefer to be running their own businesses as a career choice. Many young people in the country prefer to work for large corporations or the government, as they perceive careers in these institutions to be more stable. This is the group that would be most willing to adopt ICT to enhance the running of the businesses that they set up.

2.7.2 Gender

Opiyo and K'Akumu (2006) found that informal sector activities are mostly male dominated. The GEM report of 2013 (Amoros & Bosma, 2014) stated that young men are 1.3 times more likely than are young women to be potential entrepreneurs. The only sections where women dominated in the informal sector spectrum were general retailing, salons and eateries.

Men are dominant in such sectors as manufacturing, welding, motor mechanics, carpentry and shoe making. The GEM report of 2014 (Herrington et al., 2015) supports this contention as it revealed that in South Africa, the disparity between the prevalence of women and men in entrepreneurship was higher than elsewhere on the continent.

Jiyane and Mostert (2010), in a study conducted among Mozambican women, found that ICT could be deemed as useful for daily survival needs, though very few women were aware of the potential of ICT in improving their activities and incomes.

Jiyane and Mostert (2010) however reported that most women entrepreneurs had adopted mobile phones as forms of ICT and their ever-expanding networks were bringing them benefits.

2.7.3 Education

Education improves people's chances of obtaining formal sector jobs and can improve a person's well-being as well as their ability to participate more effectively in the community and markets. In many countries, most people have some form of formal education, with a significant number having secondary and tertiary education levels. Gikenye (2014), and Opiyo and K'Akumu (2006) view education as enabling the adoption and utilisation of ICT devices. The higher the education levels, the more willing the informal sector operators will be to adopt ICT to help run their businesses.

Literature indicates that education improves the chances of a person adopting new technologies (Gikenye, 2014; Opiyo and K'Akuma 2006). Garcia-Murilla and Velez-Aspina (2014) consider education as being key in determining whether ICT can be adopted or not by individuals in the informal sector. The two authors have observed that there is a direct relationship between education and the informal sector. The physical study area is located in the Sandton region of the city of Johannesburg.

2.8 The influence of ICT on informal traders

There has been recognition by scholars that ICT can positively affect the creation and improvement/expansion of new businesses (Donner 2007; Duncombe & Molla, 2009; Kaba et al., 2009). ICT can remove barriers to entry, while providing sector information, business skills and access to the collective wisdom of many users willing to share their experiences and expertise in any given area of both the informal and formal sectors (Perron et al., 2010). Marnewick (2014) is of the view that one aspect that can assist the informal sector to grow their business is through ICT.

Gillwald et al. (2013) observe that ICT has been identified as crucial to development and socio-economic growth. ICT can enable informal businesses to save money, compare prices, respond to customers at a faster rate, cut travel time and cost, and find and acquire new customers (Donner, 2007).

ICT is becoming more affordable in Africa. There have been increased adoption rates for both personal and business use, as observed by Donner (2007). It then becomes important to understand to what extent ICT is being used in the informal sector and what affect it has on these businesses.

Chew et al. (2010) identified four core areas where ICT, in the form of mobile phones, can assist the growth and development of informal sector activities:

(1) *Value chain core*: Using ICT for the operation of the business e.g. book keeping, keeping track of supplies, inventories;

(2) *Value chain boundaries*: Applying ICT to contact current and new customers, suppliers etc.;

(3) *Value chain support*: Accessing information about supply and demand, obtaining knowledge about the institutional and regulatory environments; and

(4) *Networking support*: Connecting with social networks and building social capital with other business people.

This shows that the informal traders can benefit greatly through the adoption of ICT.

Growth, expansion and easy access to the internet, especially by mobile devices, can enable informal traders to access merchandise because they are able to find the cheapest outlets, and can communicate with friends and acquaintances in other areas where the merchandise is sold. However, it has been argued that there is a low level of access to ICT, especially by the informal trader, due to the high costs associated with this communication medium (Dahlstron & Edelman, 2013).

It has also been argued that there might be lack of skills to utilise these new communication technologies properly, due to low levels of education associated with informal sector operators (Gikenye 2014; Opiyo & K'Akumu, 2006). Education can be regarded a key component of ICT utilisation by informal

traders. Gikenye (2014) suggests that the ability of small-scale enterprises, especially those found in the informal sector, to survive in today's increasingly competitive business environment, is predicated upon their capacity to access and use information sources. Gikenye (2014) believes that this ability is lacking for many informal sector businesses, which results in informal sector players lacking relevant and adequate information to make decisions that will have an impact on their operations.

Access to information is vital in any business practice for decision-making, especially in acquiring knowledge of sourcing materials and markets for finished products. Information on financing and accessing credit is vital for the success of any small-scale enterprise. Gikenye (2014) argues that financial and market information is one of the most important constraints inhibiting the development and expansion of small-scale enterprises in both informal and formal sectors.

Opiyo and K'Akuma (2006) argued that local markets may offer few new business prospects, and accessing opportunities in distant markets may be difficult. This is because informal market operators may lack the tools to communicate directly with buyers and suppliers in remote markets. The informal sector has to rely on intermediaries to transact business on their behalf, or travel long distances to handle their business affairs. The resultant financial and time costs associated with this can have a negative impact on these informal businesses.

Informal traders might have limited means of checking prices in other markets and can thus be forced to accept the terms on offer from local intermediaries. This indicates that there is a great need for communication services for those trading under such conditions.

The information can also assist them to identify where inputs are sold cheaply hence reducing their operational costs. All these will result in the operational efficiency of the sector hence leading to higher incomes and expansion of these informal sector businesses.

Opiyo and K'Akumu are of the view that ICT could be properly utilised to result in the growth and improvement of the informal sector. This can be achieved through enabling access to market information, such as knowledge on the demand for particular goods and services. ICT, like mobile phones, could also inform operations in the informal sector on in terms of being aware and locating where to go for business support services (Opiyo and K'Akumu 2006). There is a correlated rise in the use of mobile phones and its applications in improved and profitable informal businesses. This can be attributed to many people being able to benefit from self-sustainability practices and projects that can be accessed using mobile phones. Mobile phones hold great potential as a means of introducing and sustaining socio-economic wellbeing, as it is often perceived to be affordable on both the demand and supply sides Technology offered by the mobile phone is ideal for informal traders and business as it is flexible in terms of usage, and as a result has relatively low barriers to access and use. A common characteristic of informal traders is that they tend to generate income on a day-to-day basis.

Another trait is that they are rarely able to separate personal income from business income. Most informal traders do not keep records or pay tax, and many may be unregistered. Due to this, the ICT most suitable for their use is the mobile phone.

Boateng (2011:50) observes that the mobile phone has features and attributes which make it ideal for adoption by informal businesses participants. These include personalisation, ubiquity, localisation, immediacy and instant connectivity. Boateng (2011) explains that ubiquity highlights easy access to information in real time, as well as independent communication based on a user's location. Buyers and sellers are easily contactable. Localisation makes it possible to know where a customer is at a particular time and helps create a match between services, customer's location and preferences.

The mobile phone can hence have an impact on the way that informal sector operators conduct their business. The phone can enable convenience to be a factor in their daily operations, as it will enable the operators to keep in touch

with suppliers, customers and other traders. Traders are able to contact suppliers easily, avoid travelling long distances and incurring huge costs, which will ultimately erode their profit margins, and be able to meet demand within shorter periods.

This should apply where there is proper communication between the informal sector trader and suppliers. The mobile phone can be used to sustain existing relationships between key players. This can be easily achieved through social media alike, Facebook and WhatsApp, where the cost of communication is minimal. From the supply side, the traders will know what goods or services are needed and can supply them directly to the location of the small-scale trader.

The importance of mobile phones to informal sector operators is such that the loss or theft of a phone is dealt with as an emergency and it is replaced immediately. This shows that the informal traders regard their phones as a very important component of running their businesses.

The easy availability and access to mobile phones, especially in Africa, means that businesses are evolving even though there is insufficient research to show how mobile phone ownership and use actually affects, with the possibility to transform, income (Boateng, 2011).

The potential of mobile phones to boost income has however been recognised by participants, even though it has to be fully utilised, as shown by various studies (Boateng, 2011; Gikenye, 2010; Mpofu & Watkins-Mathys, 2011).

UNCTAD (2014) reports that when used effectively, mobile phones as a component of ICT can enable entrepreneurs, especially women, to achieve greater levels of profitability by making the internal processes of the small-scale business (e.g. order processing) more efficient, and enhancing the effectiveness of externally-directed business activities.

This can be seen in the emergence of mobile phone enabled financial services like M-pesa, which is a financial service for those without bank accounts or with limited access to financial services. The mobile money services have been

regarded as an opportunity for uplifting for informal sector traders, as it is convenient and low cost.

2.9 Informal traders and ICT needs and challenges

Several challenges have been identified in the adoption, by informal traders, of ICT. These are summarised in Figure 3.

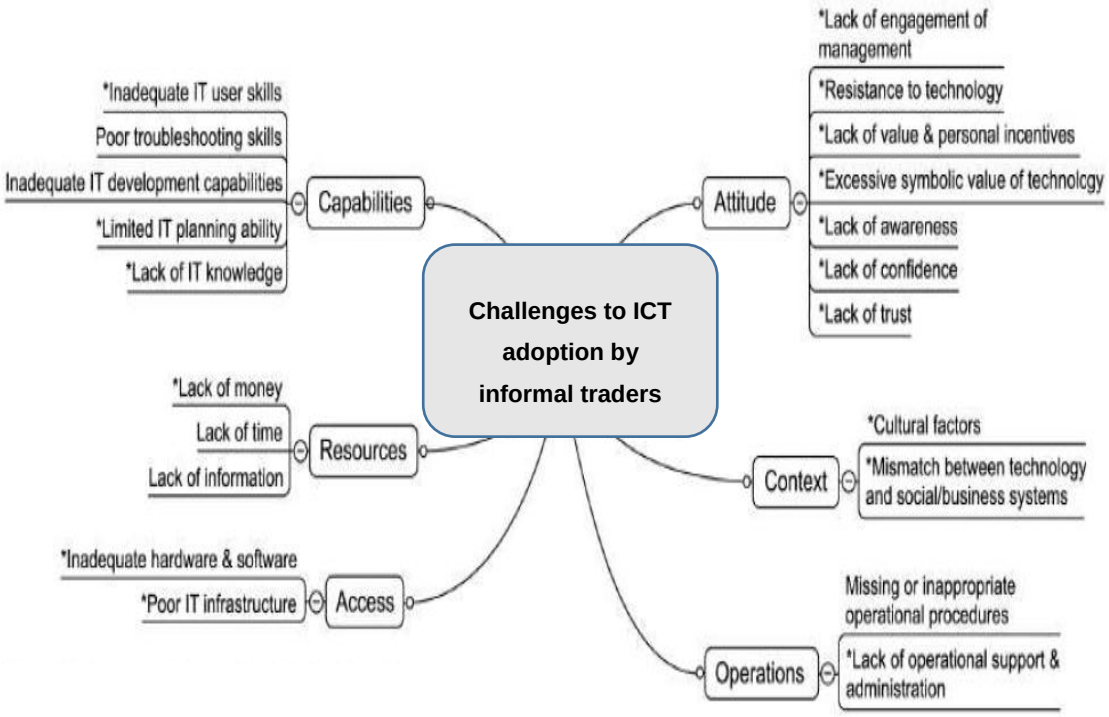

Figure 3: Challenges to ICT adoption by informal traders (Walcott, Mehruz, & Qureshi, 2008:16)

According to Gillwald et al. (2013), ICT has an important role to play during financial transactions. Informal sector participants in the Sandton region can benefit greatly by using ICT in the form of mobile phones to help them in the daily financial activities of running their businesses.

Woodward et al. (2010) observe that over 70 percent of the South African Micro-businesses are concentrated in the retail sector. Around Sandton, the presence of informal retail traders is evident. Donner and Escobar (2010:648) have

identified potential effects of ICT on micro-enterprise, which can be applied to the informal traders like those operating in the Sandton region. These include:

- Lower costs and increased availability of information, especially prices within the traders networks and being able to decide on profit margins. An example is sudden rain in the area, traders will quickly buy umbrellas from wholesalers and all sell at a uniform price;

- Easier participation in the informal sector by new entrants, as long as there is no encroachment on informally defined selling spaces of established traders. This is done by allowing them to advertise or connect with would be customers e.g. the case of car wash services near malls; and

- Assisting in cutting out intermediaries by facilitating direct information exchange and transactions between would be buyers and sellers.

These informal traders play a key role in the area especially in generating income for those who would otherwise be unemployed. Woodward et al. (2010) contend that these informal retailers are important in that they facilitate trade by breaking bulk, stocking inventory, providing products to customers at accessible locations, and adding value to the goods they sell by reducing transaction costs for customers.

All these can be facilitated if ICT devices were used effectively thereby informing traders what to sell, when to sell and at what cost, in comparison to other areas. The information needs of the informal sector can be summarised as follows:

- *Basic needs*: Information on resources required for day-to-day survival, and services that affect human needs.

- *Access to justice*: Information on relevant legislation allows informal sector traders to operate and engage in their daily activities.

- *Advertisements and entertainment*: Information on business opportunities and deals related to business activities.

- *Government information*: Information on regulations and schemes supporting small businesses.

- *Daily information*: Information influencing daily business decisions such as market prices, inventory and weather reports.

- *Announcements*: Information from different sources affecting microenterprises such as self-help projects, meetings and other activities.

- *Self-employment*: Information on success stories and networking that may support microenterprises. Figure 4 details the information needs for informal sector operators:

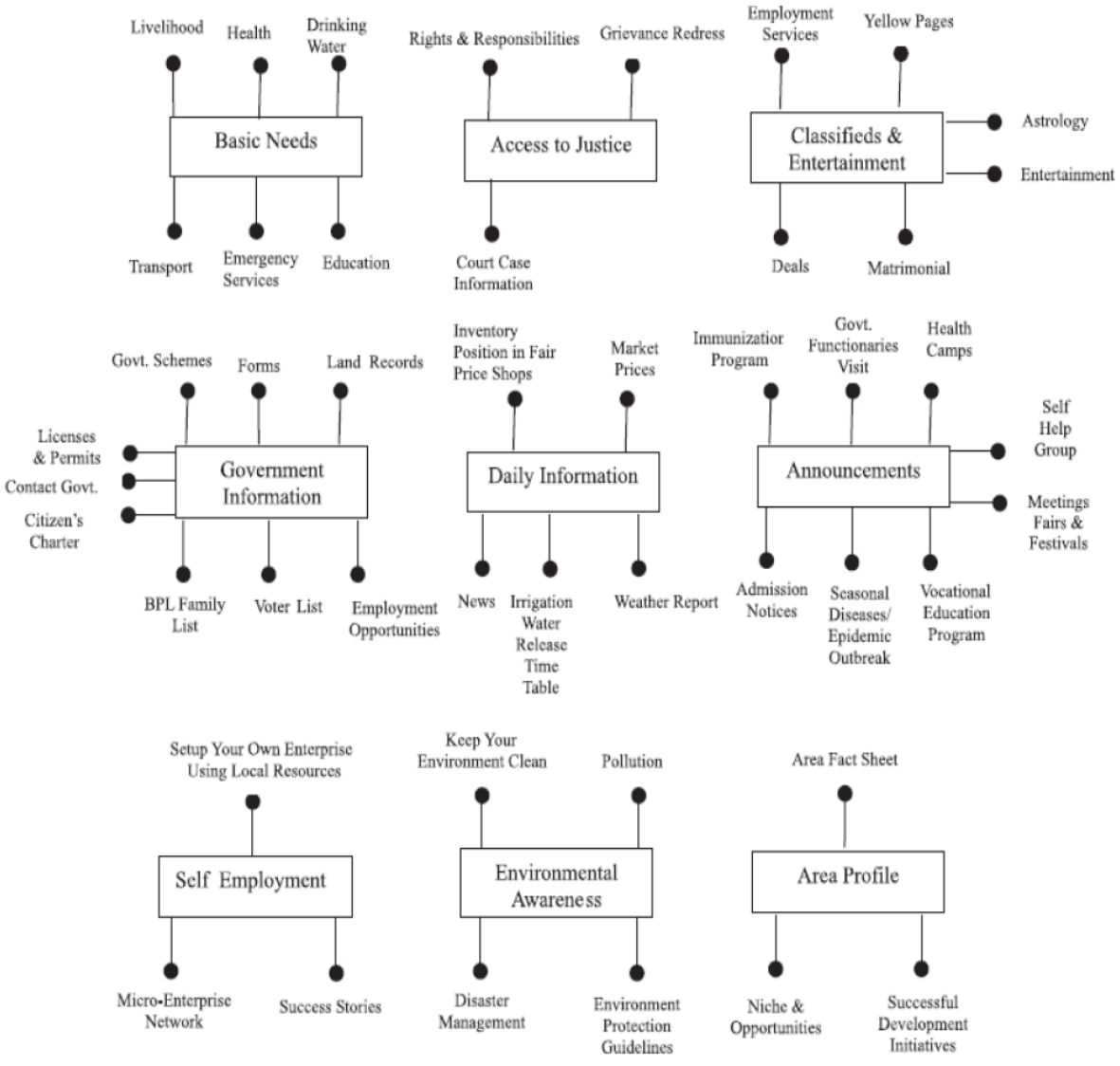

Figure 4: Detailed information on the needs of informal trader's operators (Dhingra & Misra, 2004:7)

Apart from the high cost, which is mentioned earlier as affecting the access of informal sector traders to ICT, education can contribute to whether participants will incorporate the use of ICT in their businesses.

Garcia-Murilla and Velez-Aspina (2014) are of the view that education is key in determining whether ICT will be adopted or not by individuals in the informal sector. The authors observe that there is a direct relationship between education and the informal sector. This relationship stems from the assumption that the human capital obtained through education reduces the need for people to participate in the informal sector.

In addition, Garcia-Murilla and Velez-Aspina (2014) are of the opinion that education raises people's civic commitments, which in turn might lead to them morally refusing to enter the informal sector. On the other hand, good education provides participants with the knowhow to use the emergent ICT. As Garcia-Murilla and Velez-Aspina (2014) contend, better-educated persons are quicker to adopt new technologies than are their less educated counterparts.

In recognition of the fact that some traders might not be aware of the actual and potential benefits of ICT in assisting them, Opiyo and K'Akumu (2006) argue that the current gap between the actual and potential use of ICT based services will close. This will happen incrementally, as consumers become more aware of the interactive information services and as suppliers identify cost-effective strategies to provide customised information products to the informal sector at affordable cost.

Gikenye (2014) therefore contends that there is a need to develop specific ICT technology, especially mobile phone applications that can be beneficial to informal sector operators to carry out their tasks. ICT has been recognised as playing a central role in the social and economic development; however, the informal sector has been poorly serviced in terms of ICT provision. This has contributed to the slow development of the sector as observed by Opiyo and

K’Akumu (2006). They posit that the sector can transform many aspects of daily life, including improvement in informal sector business activities.

An understanding of the adoption and utilisation of ICT by informal traders and the potential improvement of performance of this vital sector is imperative. It was the intention of this study to examine the link between ICT provision and performance improvement in the informal sector business of the Sandton region.

The role of ICT in improving business performance is revealed as providing efficiency and effectiveness to maximise the use of resources to gain maximum profitability and sustainability. This can be seen as increasing sales, better customer service experience, sustained market share, etc., thus improving profitability and business competitiveness. There is a need therefore, to understand how adoption of ICT will increase profitability of the sector operations. Commercial success for informal economies with the influence of ICT interventions is based on certain success factors:

- Influence of ICT on the informal business;
- Current utilisation of ICT in the informal business; and
- Adoption of ICT to grow the informal business.

At the level of informal businesses, ICT accessibility and infrastructure requires channelling certain resources to certain activities and not to others. Servaes (1999) argues that this implies a certain mind-set change in the way certain day-to-day tasks are conducted.

In informal economies perceived rapid changes such as utilising ICT depends very much on the power of the individual that is running the business and this is usually the owner. This eagerness may also be reflected in the owners perception of the services and products that are being offered, which in turn may provide an indication of the business tasks that are currently utilising ICT or may require ICT interventions towards which business owners may direct their limited resources.

A good example is the informal trader whose goods are sold out during the morning. This would require the shutting down of the business, which means the trader packing away the informal structure, paying someone to store the structure in the interim, taking public transport home or to the Johannesburg CBD to purchase additional goods and products to sell. This results in the informal trader losing income for the day and possibly losing his trading site to other traders as it is unprotected and informal.

In pointing out the importance of ICT to improve business performance, Gillwald et al. (2013) asserted that if the informal traders were to have access to ICT capabilities, then it might be possible to utilise this capability to improve performance. This could be in the form of ordering additional goods and products and possibly getting them delivered to the operations without losing turnover for the day. The result would be an increase in revenue and a reduction in operational costs.

ICT has the potential to integrate the economies of the informal businesses with the formal businesses, thus moving informal activities into mainstream economic activities. The lack of accessibility to ICT by informal businesses is risky for the development and growth of these businesses. The continuous growth of informal businesses in the city of Johannesburg has a direct linkage to the political history of the city, which has led to the rapid growth of informal economic activities that is seen today.

It is with the integration of specific constructs and supporting literature that four hypotheses are presented. These were tested during this research, and are detailed in the section that follows.

2.10 Hypotheses

Hypothesis 1: The influence of ICT interventions is positively related to an informal trader's performance.

Hypothesis 2: Informal traders' ICT knowledge is positively related to the business performance and competitive advantage.

Hypothesis 3: Informal traders' adoption of ICT is positively related to the increase of revenue, productivity and reduced operational cost.

Hypothesis 4: Informal traders' ICT application is positively associated with improved visibility and product/service information, to attract and retain customers.

2.11 Conclusion of literature review

The literature review has clearly indicated that there is no accepted definition of ICT and that the term is used in various contexts, which imply it takes on a number of meanings within a specific context.

In addition, insights into the constructs that form the research problem are provided:

- What is ICT?
- What is the influence of interventions of ICT on informal traders?
- What is the ICT link to performance?

In the discussion of the constructs, there have been various insights into each construct highlighting their complexities. The research sought to disclose the influence on performance of ICT interventions in informal economies in the Sandton region.

The literature review provides a foundation to comprehend and operationalise the constructs, and attempts to reveal whether the influence of ICT interventions by informal traders in the Sandton region in fact leads to increased business performance, market share etc., as indicated in the theory. The next chapter discusses the methodology used to carry out the study.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

In this chapter, the research methods used in the study are outlined. First, it provides an overview of the research paradigm, and then it focuses on the study design, the sampling procedure, as well as the methods of data collection and data analysis used to answer the research questions. In addition, it outlines the methods used to ensure rigour and validity. The study limitations and ethical consideration are discussed, along with the pilot study results.

3.2 Research methodology/paradigm

Research has always been conducted from a specific philosophical perspective. It is imperative that during the research process, the philosophical beliefs and assumptions about the nature of the social world (ontology), and what constitutes valid knowledge of that world (epistemology) are clear.

The positivist epistemological framework holds that “things exist as meaningful entities independently of consciousness and experience, that they have truth residing in them as objects (which can be viewed as objective truth), and that careful or scientific research can attain that objective truth and meaning” (Crotty 1998:6). Research within this positivist paradigm therefore implies that data can be collected from respondents and analysed in a logical scientific manner, which would result in valid outcomes that can be applied elsewhere. Within this framework, quantitative methods are justified as a research approach.

Research methodology is viewed as multiple, systematic strategies to generate knowledge about human behaviour, human experience and human environments in which the thought and action processes of research are specified so that they are logical, understandable, confirmable and useful (DePoy and Gitlin, 1994

This research investigated the influence of ICT interventions on the business performance of the informal traders in the Sandton region. As an exploratory study, it was informed by the quantitative research methodology. According to Bogdan and Biklen (1998), the use of this approach allows first-hand familiarisation with the problem thus allowing the generation of hypotheses to test an assumption. Creswell (2009) agreed; quantitative research is able to make post-constructivist claims on the strength of hypothesis testing, observation and measurement, and theory testing.

Quantitative research leads to knowledge building and is largely explanatory, since it allows for establishing causal links between variables (Kalof, Dan and Dietz, 2009; Saunders, 2009). Looked at it from this context, quantitative research tests causal relationships, and according to Kalof et al. (2009), it seeks to understand variation, and identifies the prevalence and distribution of phenomena.

3.3 Research design

According to Hovarth (2001), research design is the production of knowledge, which integrates the two main components of the research, and formulates and validates models and theories of the design. Research design served as a procedural outline for the research and was used for selection of sources and types of information (Cooper & Schindler, 2011). These theorists assert that research design is ultimately a framework for specifying the relationships among study variables.

The research was conducted by way of self-completion surveys in a questionnaire format. Surveys in questionnaire format are best suited for quantitative research. Past research has used questionnaires in measuring the variables (Chen, Gully & Eden, 2001; Zellweger, Sieger & Halter, 2011), hence the same approach was adopted.

3.4 Population and sample

According to Gauteng City-Region Observatory (GCRO, 2016), Gauteng is the smallest province geographically, with the highest population in South Africa. The reason for the study focusing on the Sandton region in the Gauteng province, is that it is an important industrial, commercial and financial centre,

3.4.1 Population

According to Cooper and Schindler (2011), the population is the total number of subjects represented within a whole, about which a researcher wishes to make some inferences. Young and Tilley (2006) asserts that a population usually consists of all the persons that a researcher wants to study.

The study area name, Sandton, comes from a combination of the two main suburb names of Sandown and Bryanston, and in less than 30 years, it has become the most significant business and financial district in the South African landscape. The central Sandton financial district dominates formal business activity in Region E, which falls under the municipality of the City of Johannesburg and is home to a large number of local and foreign financial businesses, as well the Johannesburg Stock Exchange, the Sandton Convention Centre, Sandton City shopping centre and Nelson Mandela Square shopping centre.

A map of the region is shown in Figure 5.

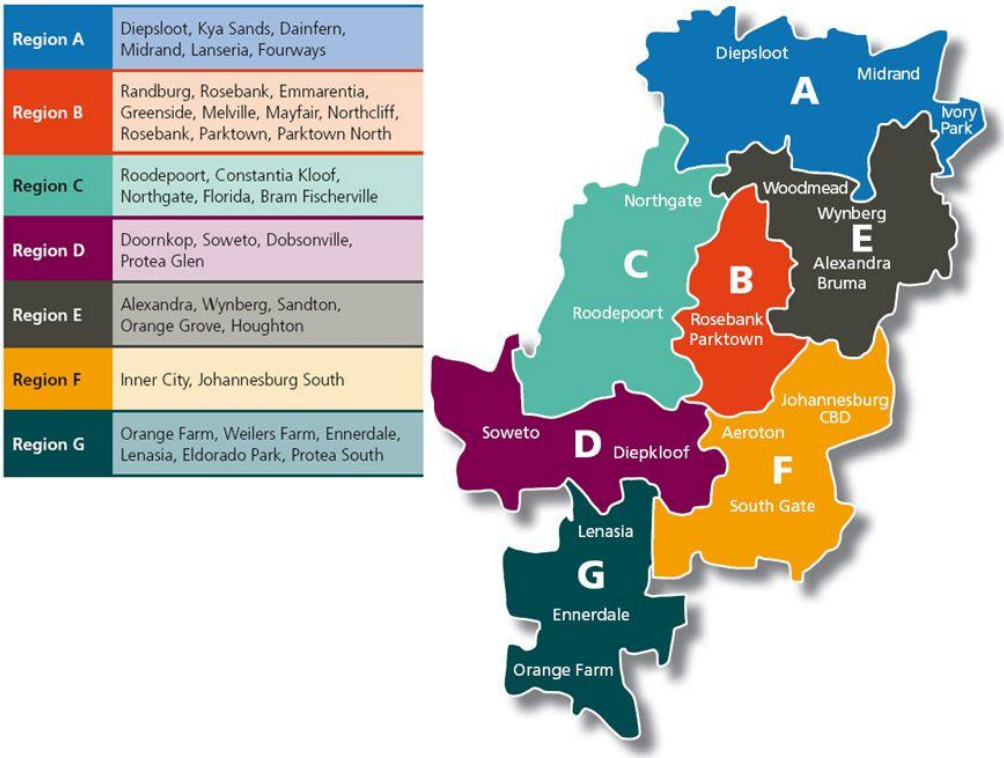

Figure 5: Map of Region E, Sandton (JRA, n.d.)

There is currently no complete insight of the current numbers of informal businesses within the Sandton region and there is no indication of the demographic population of these informal businesses. The complication is that informal economy role players are constantly entering and leaving these business activities.

However, a 2009 City of Johannesburg report compiled by Tamilika Consulting Services (2009) indicated that there were approximately 1 826 informal sector traders in the greater Sandton region. The respondents interviewed comprised of spaza shops (46 respondents), tuk-tuks (30 respondents), food vendors (38 respondents), street hawkers (88 respondents) and construction site vendors (48 respondents), and are either owners or employees of informal businesses.

3.4.2 Sample and sampling method

In research, sampling is utilised when a researcher searches to obtain particular information about a certain segment of the population. Sampling revolves around the selection of some elements in a population in order to draw conclusions that are valid for the entire population (Cooper & Schindler, 2011).

The population was sampled according to non-probability sampling. Data for this study was gathered from youth and adults who are informal traders in the Sandton region. Non-probability sampling was the preferred method because some of the vendors keep moving due to harassment from Metro officials and gatekeepers.

Non-probability sampling has a major strength when compared to probability sampling. According to Seale, Gobo, Gubrium and Silverman (2004), it is a better choice for many situations, such as when the research is for exploratory purposes, when resources are limited, and it requires field assistants with only a low level of skill.

Sample size for non-probability sampling is unclear, and should be dictated by the research objectives, ensuring that it provides useful and credible results (Saunders et al., 2009). Taking cognisance of this and the chosen data analysis techniques, a sample size of 250 respondents was considered satisfactory for this research.

3.5 The research instrument

A research instrument can also be referred as a “device used to collect data and can include questionnaires, tests, schedules, and checklists” (Seaman, 1991:42). According to Polit and Hunger (1997), the questionnaire is an ideal method of gathering information from respondents about attitudes, knowledge, beliefs and feelings.

It is important to note that the survey questionnaire did not attempt to source in-depth responses from the informal businesses, as the research questionnaire aimed to gather a small amount of information on a large sample size.

The survey questions were constructed with the following in mind:

- Short and simple questions;
- Non leading questions;
- Logical order of questions;
- No unclear or bothersome questions; and
- A variety of options from which the respondent makes a choice (Harvard University, 2012).

This study utilised a paper-based questionnaire with specific questions used to measure four dependent variables. A five-point Likert scale was utilised. Polit and Hunger (1997) view a Likert scale as being a psychometric most often used in research that utilises questionnaires. In this study, the five-point Likert scale required respondents to strongly disagree, disagree, be neutral, agree, or strongly agree. This resulted in the quantification of the responses and thus enabled statistical analysis.

In each question in the Likert scale, a statement is presented in which a respondent is required to indicate a degree of agreement or disagreement in a multiple-choice format. Polit and Hunger (1997) stated that the advantages of the Likert scale lie in the fact that the questions are easily understood, the answers are quantifiable and can be analysed both computationally and mathematically. The responses are also able to accommodate neutral and undecided feelings of participants.

The questions from 2.1 to 4.9 asked participants about causes that encourage one to start an enterprise. Questions 5.1 to 7.13 asked about factors that

discourage/limit participants form starting enterprise. The research instrument appears in Appendix A.

The research questionnaire was pre-tested in a pilot study.

3.5.1 Procedure for data collection

Surveys are data collection tools that collect demographic, behavioural and attitudinal information (Harvard University, 2012). According to Short, Moss and Lumpkin (2009) surveys covers ideological aspects such as political sciences, economics and sociology, which reflect the disparities between the different race groups in South Africa, hence race was not included in the research questionnaire.

The methodological approach adopted is this study was a cross-sectional survey, which was understood to be a research process that is observational and involves the collection and analysis of data from a specific sample of the population at a specific time.

In this process data is collected from respondents using a particular research instrument, while at the same time observations are made and recorded that form an integral part of the data analysis process. An important aspect of cross sectional surveys is that the data is collected from respondents without manipulating them. Thus, the data collected must be as accurate as possible and reflect the actual situation on the ground

The data collection questionnaire had a covering letter, which clearly explained what the survey would be used for and gave instructions as to how to answer the questions. The survey questionnaire began with demographic and background questions including gender, age, qualifications and whether employed or unemployed. The research survey was explained in English informing respondents about the purpose of the survey and the intention of the research for a Master's degree paper. The researcher had an assistant who was fluent in a number of South African indigenous languages (Xhosa, Zulu, Sotho and Tswana), who assisted with the introduction of the research to the respondents. In addition, the researcher hired a tuk-tuk in the Sandton region to assist in the administrating of the questionnaire.

3.5.2 Data analysis and interpretation

The data was analysed using the IBM SPSS statistics 23 program. Descriptive statistics was utilised to describe the sample data in such a way as to portray the typical respondent and to reveal the general pattern of responses from the questionnaire. The continuous variables were tested for normality because the distribution of the data determines the type of tests used for analysis.

The distribution determined that non-parametric tests be utilised. It was proposed that the distribution of the data be tested using the Kolmogorov-Smirnov test, because the sample size was anticipated to be greater than 50 (Pallant, 2010).

Correlation analysis was used to describe the strength and direction of the relationship between ICT utilisation with service, competitiveness and financial performance individually. The Spearman's rank order correlation (rho) was used because the data was not normally distributed (Pallant, 2010).

Simple regression analysis was used to test the predictive power of the independent variables: service, competitiveness and financial performance, individually on the dependent variable (ICT utilisation). The analysis is detailed as follows:

Model 1: $Y = \beta_0 + B_1X_1$

Model 2: $Y = \beta_0 + B_1X_2$

Model 3: $Y = \beta_0 + B_1X_3$

Where: X_1 is Service
X_2 is Competitiveness
X_3 is financial performance
Y is the dependent variable: ICT utilisation.

3.6 Limitations of the study

A pilot study was carried out to determine some of the limitations that could arise during fieldwork. Some of the limitations identified included the fact that the researcher, being of Indian descent, is not conversant with the dominant languages spoken by the informal traders in the area, Zulu, Xhosa, Sotho, Pedi,

Tsonga and Venda. This proved to be a problem as many of the respondents could not communicate very well in English. The researcher employed an assistant conversant in these languages to assist with the administration of the questionnaire. Nevertheless, the researcher asked probing questions and requested explanations in cases where the translation might not have been clear.

The study was reliant upon the sample of informal traders who are currently operating in the Sandton region. The possibility of respondent's bias affecting the completion and interpretation of the questionnaire, particularly while operating the business was considered.

Further limitations identified and anticipated were first, that the questionnaire completion was dependent on time taken by informal business owners and employees to complete the questionnaire, second that the respondents answered truthfully. Third, the participants might not understand the ICT-based questions and ICT's relation to their business.

Lastly, the informal traders were at times extremely busy and as such could not afford to respond to the questionnaire in one sitting, as they had to continue with their business activities. The researcher and his assistant had to be patient and wait for the traders to finished dealing with their clients before proceeding with the questionnaire administration. This resulted in some questionnaires taking a long time to complete.

3.7 Research approach

This first phase of the research questionnaire was based on information gathered from the pilot study of thirty informal traders in the Sandton region, with the aid of a research assistant who introduced the purpose of the survey questionnaire and assisted as a language interpreter. Furthermore, the assistant provided observation feedback on the 250 respondents in the main survey (Appendix B).

This questionnaire was administered directly to informal traders, spaza shops, tuk-tuks, food vendors and hawkers in the Sandton region during the months of November and December 2015.

3.8 Validity and reliability of the research

To enhance the quality of the study, validity and reliability were taken into account, to reduce the possibility of obtaining incorrect findings and consequential flawed interpretations. While reliability is a necessary contributor to validity, it is not sufficient to ensure validity. Reliability has to do with the accuracy and precision of a measurement procedure while validity is the extent to which a test measures what was to be measured, according to Field (2009).

The concept of data validity can be understood from the literature to mean an integrated judgment of the degree to which an empirical evidence and theoretical rationales support the appropriateness of inferences, propositions or conclusions (Cook & Beckman, 2006; Cronbach & Meehl, 1955; Gomez & Elliot, 2013; Kane, 1992; Messick, 1980). According to Field (2009), validity is defined as an indication of whether an instrument measures what it sets out to measure. Cooper and Schindler (2011) are instructive in that they make a link between validity and reliability.

The reliability of a study is defined as the ability of a measure to produce the same results under the same conditions (Field, 2009). According to Cooper and Schindler (2011), a measure is reliable to the degree that it supplies consistent results.

3.8.1 External validity

External validity follows internal validation and is therefore is an advancement stage in the research process according to Mouton and Marais (1996). It is also notable that to achieve external validity, the results of the research should be generalisable to all similar cases. In other words, the external validity of research

findings is the data's ability to be generalised across person, settings and times; "external validity denotes generalisation, which is deemed an inductive process of extrapolating beyond the data collected" (Cooper & Schindler, 2011:219).

According to Vockell and Asher (1995), to maintain the reliability of the questions being asked, the results of the measuring processes should be consistent when the study is applied elsewhere. The measurement will be reliable to the extent that the results are the same every time they should be the same. Therefore, reliability is about consistency of the test and instrument used during the research (Nxumalo, 2001).

3.8.2 Internal validity

Mouton and Marais (1996) indicate that internal validity is used to denote that a study has generated accurate and valid findings of the specific phenomena being studied. This entails that the data collected is accurate and reliable and that the analyses are relevant for the type of data gathered. The constructs are measured in a valid manner and that the conclusions are supported by the data.

Vockell and Asher (1995) state that the data collection process is valid to the extent that it meets the consistence criteria:

- Using a logically appropriate operational process;
- Matching the items to the operational process; and
- Having a reasonable amount of reliability.

According to Le Compte and Preissle (1993), reliability is the extent to which the same data process can be duplicated and it assumes that any other researcher using the same process will get the same results.

This study used a logical operational process to collect the data. Administering of the questionnaires took place at the same time as the observations of the activities in the field.

The study opted for convenience sampling. Informal sector activities in the study area are similar to the ones found in urban areas all over the country. It was considered that the findings from this study could be replicated in any other area in the country. A pilot study, conducted in the Sandton CBD in September 2015, was used to check the face validity, possible errors and ambiguity based on a sample of 30 respondents. Face validity is similar to content validity; it is the "assessment of the correspondence of the variables to be included in a summated scale and its conceptual definition" (Hair, 2010:92).

The pilot test was utilised to ensure validity and reliability of the data collected using the questionnaire. The pilot study allowed for the pre-testing of the research instrument. The pilot process resulted in the rewording of some of the research questions. Construct validity is the extent to which a set of measured items that reflects the theoretical latent construct, those the items are designed to measure (Hair, 2010, 631). However, as the construct validity of the scale could not be guaranteed in the context of informal traders in the Sandton CBD, it was necessary to check its underlying dimensions on the empirical data of the actual research.

3.8.3 Reliability

The reliability of the main research questionnaire was also utilised to evaluate the Cronbach's Alpha, which was to measure internal consistency. The Cronbach alpha from the pilot study indicated that a minimum sample size of 250 respondents was required to obtain reliability for the main research. The Cronbach Alpha was utilised to measure the internal consistency by establishing that certain items measured the same construct and would produce a consistent result if this research were conducted later. During data analysis, Cronbach's alpha (Wright, 1979) was computed to measure the internal consistency of the data, further establishing the reliability of the results. The general accepted lower limit for Cronbach's alpha is 0.7, although this may decrease to approximately 0.6 in exploratory research (Hair, 2010).

Reliability is then the extent to which results are consistent and yield the same results on repeated trials (Neuendorf, 2002). To ensure exploited reliability the same questionnaire was utilised. The main advantage of using this method is that it provided key insights such as the, location, type of informal business, age of owner, and characteristics of the business owner. Particular was given to the process of providing the research survey to informal businesses, as well as the feedback once the research survey has been completed. The disadvantage of this feedback is that it would not reveal any information recovered from the convenience sample questionnaire.

The research survey addressed the hypotheses and explained ICT interventions intended for informal traders, and assessed whether they led to growth and sustainability of the traders' businesses, thus providing competitive advantage.

3.9 Ethical considerations

Informed consent from each informal trader was received prior to conducting the research survey. Confidentiality and anonymity of the informal traders input was guaranteed, and respect for informal traders' gatekeepers was given. All data was reported accurately.

3.10 Pilot study results

The four hypotheses presented did not provide significant relations with ICT. The perceived effects of business performance, market share, business formalisation and the perceived high ICT levels had a greater impact on business performance.

The findings from the pilot did not correlate across the respective hypotheses. The majority of respondents indicated that informal traders in the Sandton CBD needed to evaluate the importance of ICT adoption on the business performance; however, results of the plot survey were not conclusive as the sample size was limited and no conclusive findings could be made.

The correlation coefficients all had a big effect i.e. r - / + 6, there being a negative relationship between ICT adoption and the other variables. Due to the small sample size and the limited time, regression analysis could not be performed on the pilot data.

A deeper analysis was required to understand why the 28 respondents in the pilot research did not overwhelmingly indicate that ICT adoption had a perceived positive impact on business performance, market share and formalisation. This was put down to the low sample size and the study being limited to four locations in the Sandton CBD precinct only.

The outcome of the pilot study did demonstrate the importance of testing the reliability of the sample size, targeted population group, sample area and the questionnaire that was administrated. The pilot study was used to improve the questionnaire, enhance the literature review and further other key aspects of this research paper.

3.11 Conclusion

This chapter provides a conceptual framework that shows the influence of ICT interventions on the performance of informal economies. It outlines the research paradigm under which the study falls. The section provides the research methodology followed in the course of carrying out the study and a brief background of the study area.

Data collection methods including sampling, methods of data collection, analysis and interpretation are discussed. In addition, the limitations of the study and measures adopted to ensure rigour and reliability are discussed. Chapter 4 discusses the findings and data interpretation.

CHAPTER 4: PRESENTATION OF RESULTS

4.1 Introduction

The previous chapter explained the research methodology utilised to obtain data, which assisted in researching the question and testing hypotheses. This chapter outlines processes and procedures undertaken in the data analysis phase of the research. It emanates with presenting demographic information of the sample. It moves on to explain the validity of the instrument, which was conducted through factor analysis.

It reports the results of the reliability analysis using Cronbach's alpha, while presenting descriptive statistics on respondents' perceptions towards service quality variables. Results from the correlation and regression analysis used to test the hypotheses are described. Finally, the chapter is concluded by summarising the results of the hypotheses tests. The analysis was conducted using SPSS version 23.

4.2 Demographic characteristics of the sample

4.2.1 Gender

Table 5: Gender distribution

Gender	Frequency	Percent
Male	164	65.6
Female	86	34.4

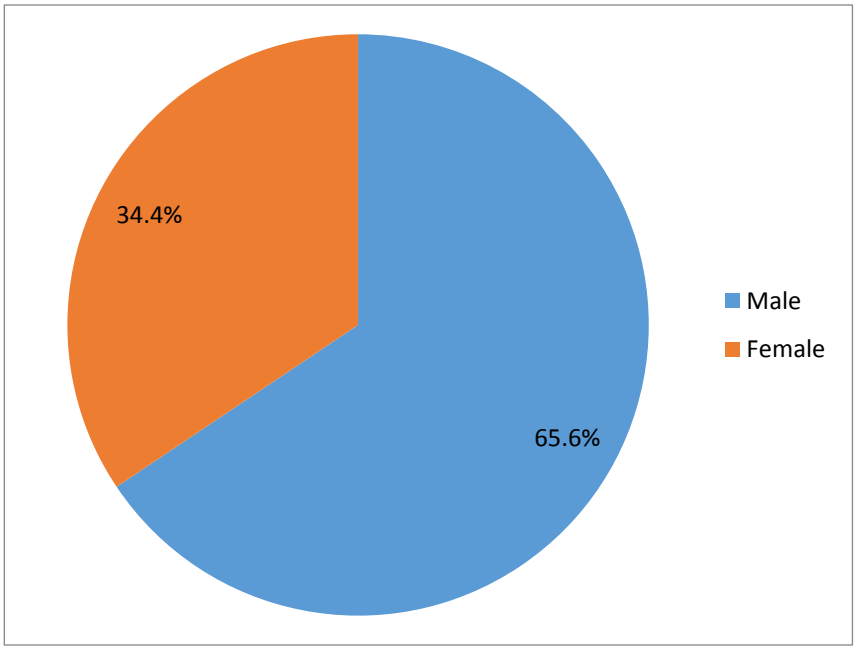

Figure 6: Gender distribution

Table 5 and Figure 6 show 164 (65.6 percent) males and 86 (34.4 percent) females in the sample, totalling 250 respondents.

4.2.2 Education level

Table 6: Education level distribution

What is your highest level of education?	Frequency	Percent
Primary	23	9.2
Secondary	75	30.0
Matric	131	52.4
Tertiary	21	8.4

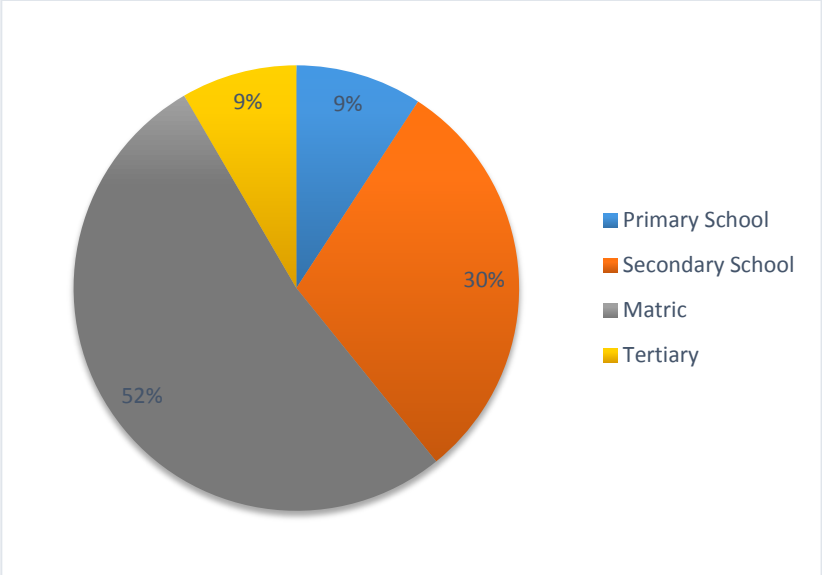

Figure 7: Level of education

Table 6 and Figure 7 shows, of the total sample of 250 respondents, 23 (9.2 percent) have a primary school qualification, 75 (30.0 percent) have a secondary education qualification, 131 (52.4 percent) have a matric qualification and 21 (8.4 percent) have a tertiary qualification.

4.2.3 Role in the business

Table 7: Business role distribution

What best describes your role at this outlet?	Frequency	Percent
Owner	165	66.0
Co-owner	39	15.6
Employee	39	15.6
Other	7	2.8

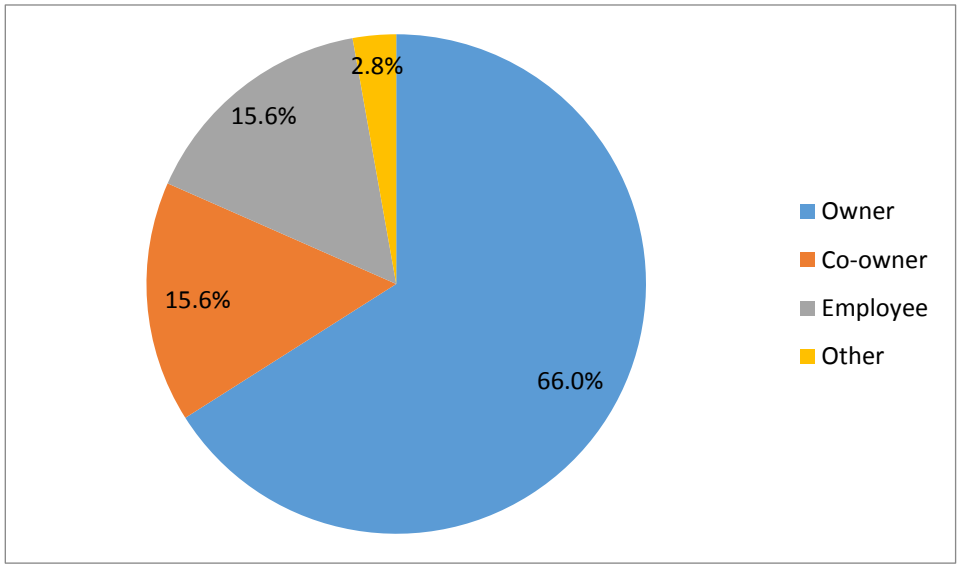

Figure 8: Business role distribution

Table 7 and Figure 8 show, of the total sample of 250 respondents, 165 (66.0 percent) are owners, 39 (15.6 percent) are co-owners, 39 (15.6 percent) are employees and seven (2.8 percent) are other.

4.2.4 Business start-up assistance

Table 8: Business start-up assistance

Who assisted you in starting the business?	Frequency	Percent
Yourself	119	49.2
Your family	70	28.9
Your friend	28	11.6
Other	25	10.3

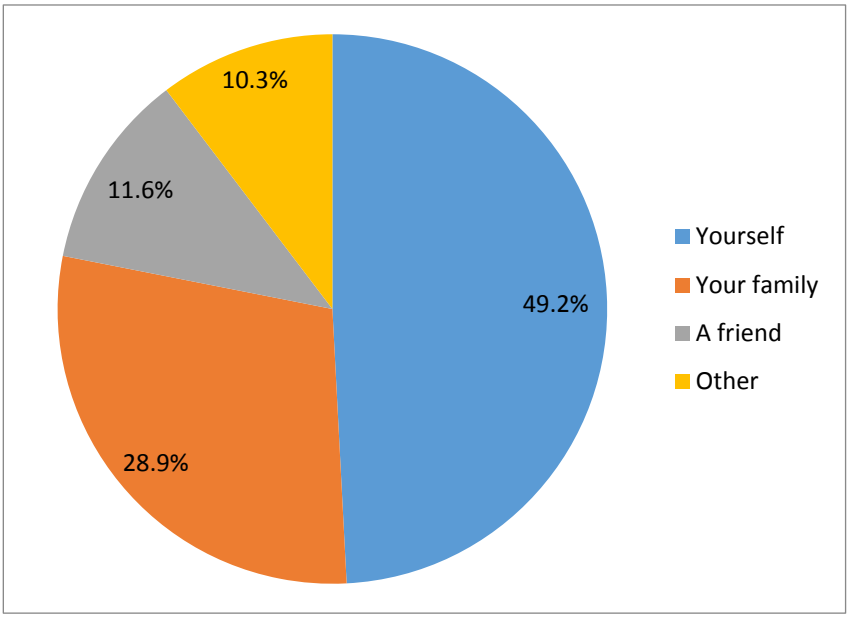

Figure 9: Business start-up assistance

Table 8 and Figure 9 indicate that 119 (49.2 percent) assisted themselves, 70 (28.9 percent) received family assistance, 28 (11.6 percent) received assistance from friends and 25 (10.3 percent) from other sources, totalling 250 respondents.

4.2.5 ICT utilisation

Table 9: ICT devices used

ICT device used	Frequency	Percent
Smart phone	103	29.5
Cell phone	105	30.1
Tablet	59	16.9
PC	57	16.3
Other	25	7.2

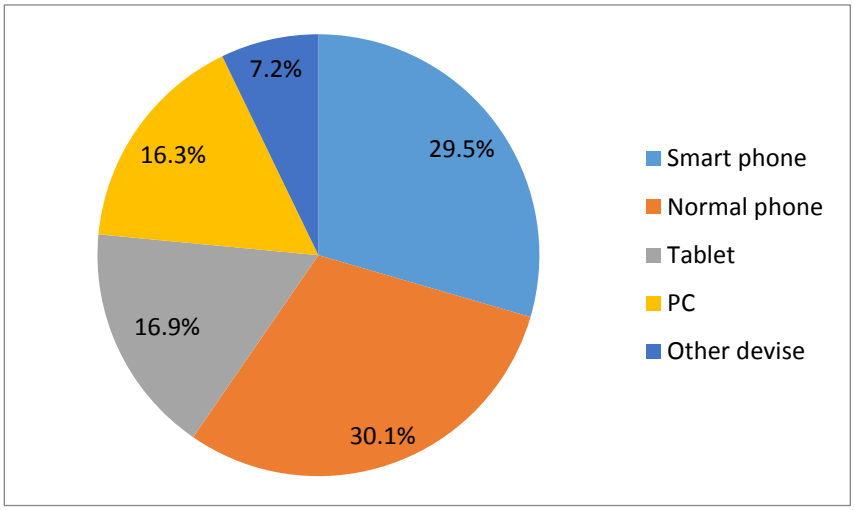

Figure 10: ICT device used

Table 9 and Figure 10 show 103 (29.5 percent) used a smart phone, 105 (30.1 percent) used a normal phone, 59 (16.9 percent) used tablets, 57 (16.3 percent) use personal computers (PCs) and 25 (7.2 percent) use other ICT devices, totalling 250 respondents.

4.2.6 Respondent age

Table 10: Respondent age

	N		Mean	Median	Std. Deviation	Min.	Max.
	Valid	Missing					
What is your age in years?	249	1	30.89	30	5.558	19	56

In the output represented in Table 10, concerning the age in years of 249 respondents, the range of ages was from 19 to 56 years, with a mean of 30.89 and median of 30 years of age. The standard deviation was 5.558.

4.2.7 Business age

Table 11: Business age

	N		Mean	Median	Std. Deviation	Min.	Max.
	Valid	Missing					
What is the age of your business?	242	8	5.86	5.00	4.338	0	20

From the information reflected in Table 11, concerning the age of the business of 242 respondents, the range of the age of a business is from 0 to 20 years, with a mean of 5.86, median of 5.00, and standard deviation of 4.338.

4.2.8 Employees

Table 12: Employees in business

	N		Mean	Median	Std. Deviation	Min.	Max.
	Valid	Missing					
How many people do you employ in your business?	245	5	2.49	2.00	3.027	0	25

From the information reflected in Table 12, concerning the number of people employed in the business of 245 respondents, the range of people employed is from 0 to 25, with a mean of 2.49, median of 2 and standard deviation of 3.027.

4.2.9 Monthly turnover

Table 13: Monthly turnover

	N		Mean	Median	Std. Deviation	Min.	Max.
	Valid	Missing					
What is your average monthly turnover?	133	1	3267.67	9000	36238.462	900	200 000

From the information reflected in Table 13, concerning the average monthly turnover of 133 respondents, the range of average monthly turnover was from R900 to R200 000, with a mean of R23 267.67, median of R9 000 and standard deviation of 36238.462.

4.3 Validity analysis

The assessment of the validity of the measuring instrument was achieved by means of factor analysis. SPSS version 23 was used to conduct this analysis. The 29 items of the six service quality dimensions were factor analysed to test for construct validity.

As previously discussed in Chapter 3, the test for construct validity is used to determine the degree to which a measure confirms a linkage of associated hypotheses generated from the theoretical rationale.

4.3.1 ICT utilisation

Table 14: KMO and Bartlett's test: ICT utilisation

Test		Result
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.865
Bartlett's Test of Sphericity	Approx. Chi-Square	1289.571
	df	21
	Sig.	.000

Table 15: Total Variance: ICT utilisation

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	Percent of Variance	Cumulative percent	Total	Percent of Variance	Cumulative percent
1	4.508	64.405	64.405	4.508	64.405	64.405
2	.872	12.452	76.858			
3	.666	9.517	86.375			
4	.369	5.273	91.648			
5	.270	3.857	95.505			
6	.225	3.211	98.716			
7	.090	1.284	100.000			

**Extraction Method: Principal Component Analysis.*

The seven items of the ICT utilisation scale underwent principle components analysis (PCA). Inspection of the correlation matrix revealed the presence of many coefficients of 0.3 and above. The Kaiser-Meyer-Oklin value was 0.865 as indicated in Table 14, exceeding the recommended value of 0.6.

Principle components analysis revealed one component with an eigenvalue exceeding one. An inspection of the scree plot revealed a clear break after the first component. The one component solution explained 64.405 percent of the variance (Table 15).

4.3.2 Financial performance

Table 16: KMO and Bartlett's tests: Financial performance

Test		Result
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.900
Bartlett's Test of Sphericity	Approx. Chi-Square	1593.622
	df	28
	Sig.	0.000

Table 17: Total variance: Financial performance

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	Percent of Variance	Cumulative percent	Total	Percent of Variance	Cumulative percent
1	5.341	66.756	66.756	5.341	66.756	66.756
2	.989	12.357	79.114			
3	.474	5.924	85.038			
4	.380	4.747	89.785			
5	.281	3.510	93.295			
6	.194	2.420	95.715			
7	.176	2.201	97.916			
8	.167	2.084	100.000			

**Extraction Method: Principal Component Analysis.*

The eight items of the financial performance scale underwent principle components analysis (PCA). Inspection of the correlation matrix revealed the presence of many coefficients of 0.3 and above. The Kaiser-Meyer-Oklin value is 0.9 as indicated in Table 16, exceeding the recommended value of 0.6.

Principle components analysis revealed a presence of one component with eigenvalues exceeding one. An inspection of the scree plot revealed a clear break after the first component. The one component solution explained 66.756 percent of the variance (Table 17).

4.3.3 Level of service

Table 18: KMO and Bartlett's tests: Service levels

Test		Result
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.894
Bartlett's Test of Sphericity	Approx. Chi-Square	1086.468
	df	15
	Sig.	.000

Table 19: Total variance: Service levels

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	percent of Variance	Cumulative percent	Total	percent of Variance	Cumulative percent
1	4.258	70.974	70.974	4.258	70.974	70.974
2	.642	10.696	81.670			
3	.422	7.028	88.698			
4	.293	4.876	93.574			
5	.228	3.800	97.374			
6	.158	2.626	100.000			

***** *Extraction Method: Principal Component Analysis.*

The six items of the level of service scale underwent principle components analysis (PCA). Inspection of the correlation matrix revealed the presence of

many coefficients of 0.3 and above. The Kaiser-Meyer-Oklin value is 0.894 according to the results in Table 18, exceeding the recommended value of 0.6.

Principle components analysis revealed a presence of one component with eigenvalues exceeding one. An inspection of the scree plot revealed a clear break after the first component. The one component solution explained 70.974 percent of the variance (Table 19).

4.3.4 Level of competitiveness

Table 20: KMO and Bartlett's test: Level of competitiveness

Test		Result
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.914
Bartlett's Test of Sphericity	Approx. Chi-Square	1612.501
	df	15
	Sig.	0.000

Table 21: Total variance: Level of competitiveness

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	percent of Variance	Cumulative percent	Total	percent of Variance	Cumulative percent
1	4.908	81.793	81.793	4.908	81.793	81.793
2	.404	6.741	88.534			
3	.251	4.179	92.713			
4	.181	3.013	95.726			
5	.152	2.530	98.256			
6	.105	1.744	100.000			

***** *Extraction Method: Principal Component Analysis.*

The six items of the level of competitiveness scale underwent principle components analysis (PCA). Inspection of the correlation matrix revealed the presence of many coefficients of 0.3 and above. The Kaiser-Meyer-Oklin value is 0.914 as indicated in Table 20, exceeding the recommended value of 0.6.

Principle components analysis revealed the presence of one component with eigenvalues exceeding one. An inspection of the scree plot revealed a clear break after the first component. The one component solution explained 81.793 percent of the variance (Table 21).

4.4 Reliability analysis

Reliability is mainly concerned with the scale's internal consistency, whether the items are all measuring the same underlying construct. One of most commonly used indicators of internal consistency is the Cronbach's alpha coefficient.

The response scale used is ordinal. The categories used are strongly disagree (1), disagree (2), neutral (3), agree (4) and strongly agree (5).

Table 22: Cronbach's alpha

Item	Cronbach's Alpha	Number of items
ICT Utilisation	0.904	7
Financial Performance	0.927	8
Service	0.914	6
Competitiveness	0.955	6

Table 22 summarises the Cronbach's alpha scores. All the items showed a high score in terms of measurement reliability. The Cronbach's alpha scores ranged from 0.904 to 0.955, exceeding the recommended level of 0.7.

4.5 Normality

The Kolmogorov-Smirnov test was used to test the distribution of each variable. This test is used for a sample size of 50 or more.

4.5.1 ICT Utilisation

Table 23: Tests of normality: ICT utilisation

Variable	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ICT Utilisation	.155	250	.000	.928	250	.000

**Lilliefors Significance Correction*

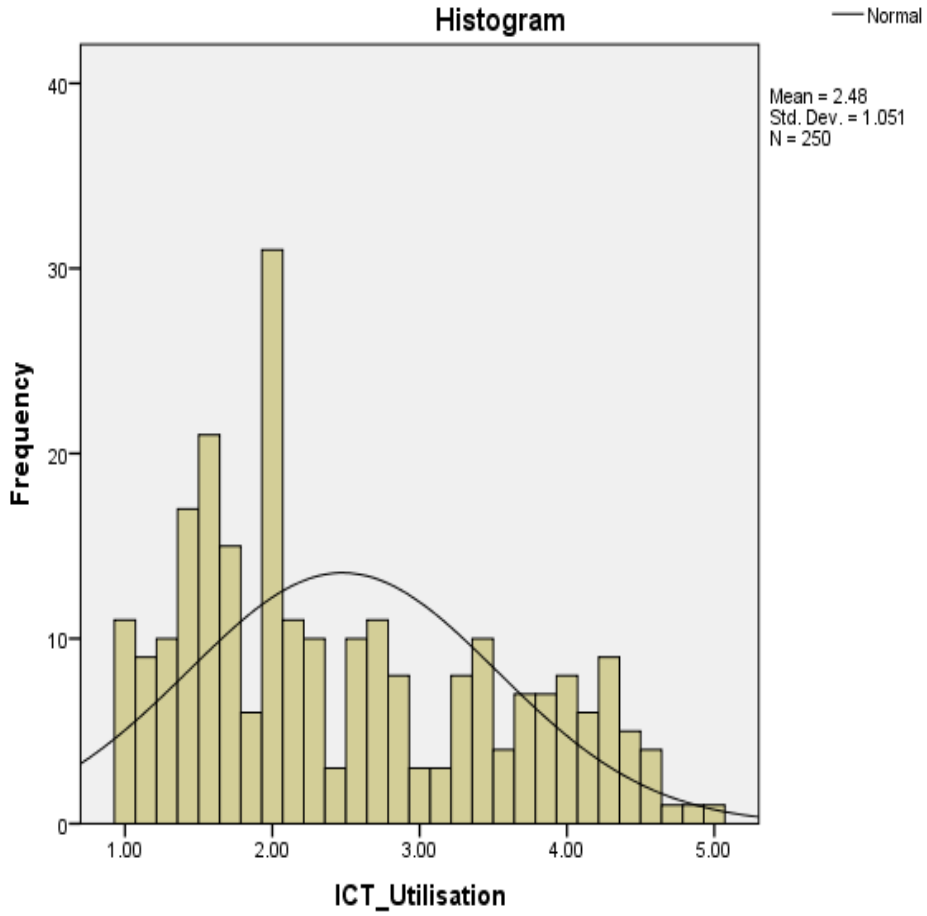

Figure 11: Histogram: ICT utilisation

According to the data analysis indicated in Table 23, the p-value (Sig.) for ICT utilisation is <0.05, therefore ICT utilisation is not normally distributed as indicated in Figure 11. As a result, a non-parametric test was utilised. In order to identify whether a relationship existed, the Spearman's Rank Order correlation (rho) test was used. No alternative non-parametric tests available for the regression analysis; therefore, the simple regression analysis was utilised.

4.5.2 Financial performance

Table 24: Tests of normality: Financial performance

Variable	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Financial Performance	.067	250	.009	.976	250	.000

* Lilliefors Significance Correction

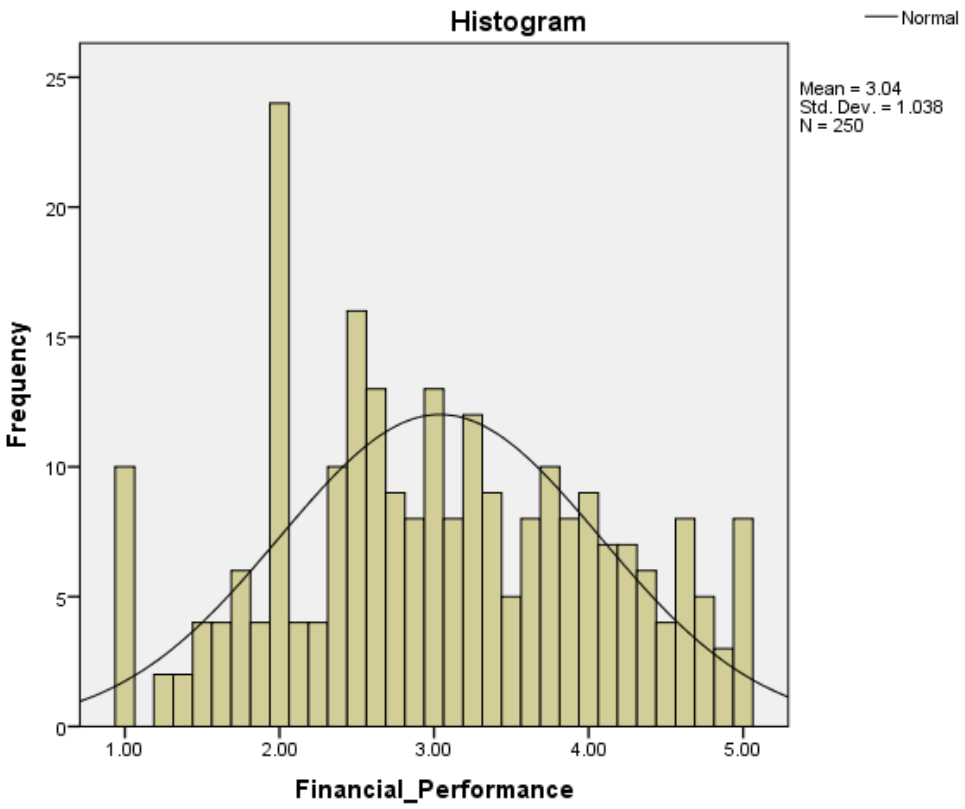

Figure 12: Histogram: Financial performance

According to the results in Table 24, the p-value (Sig.) for financial performance is <0.05, therefore financial performance is not normally distributed as indicated in Figure 12. As a result, a non-parametric test was used. In order to identify whether a relationship exists, the Spearman's Rank Order correlation (rho) test

was utilised. No alternative non-parametric tests available for the regression analysis; therefore, the simple regression analysis was utilised.

4.5.3 Level of service

Table 25: Tests of normality: Level of service

Variable	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Level of service	.079	250	.001	.970	250	.000

* Lilliefors Significance Correction

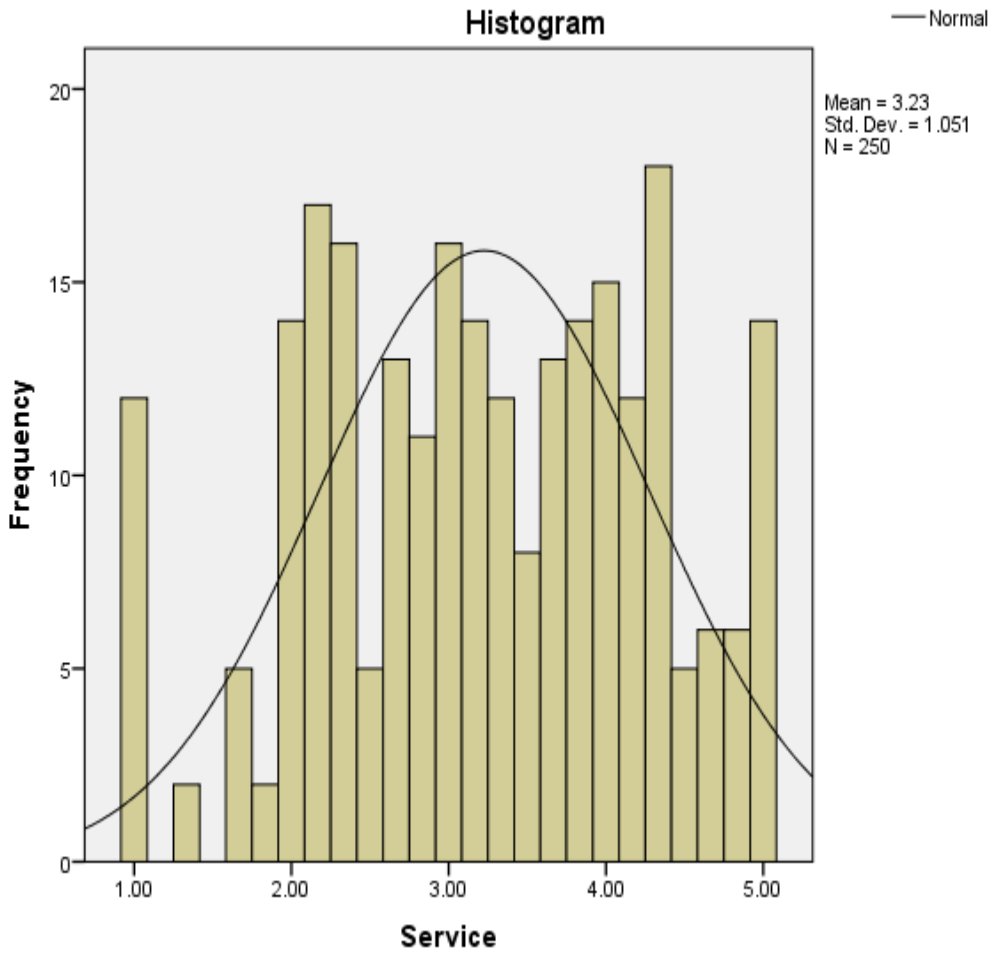

Figure 13: Histogram: Level of service

According to the results in Table 25, the p-value (Sig.) for the level of service was <0.05, therefore the level of service was not normally distributed as indicated in Figure 13. As a result, a non-parametric test was used. In order to identify whether a relationship exists, the Spearman's Rank Order correlation (rho) test was utilised. No alternative non-parametric tests available for the regression analysis; therefore, the simple regression analysis was utilised.

4.5.4 Level of competitiveness

Table 26: Tests of normality: Level of competitiveness

Variable	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Level of competitiveness	.094	250	.000	.957	250	.000

* Lilliefors Significance Correction

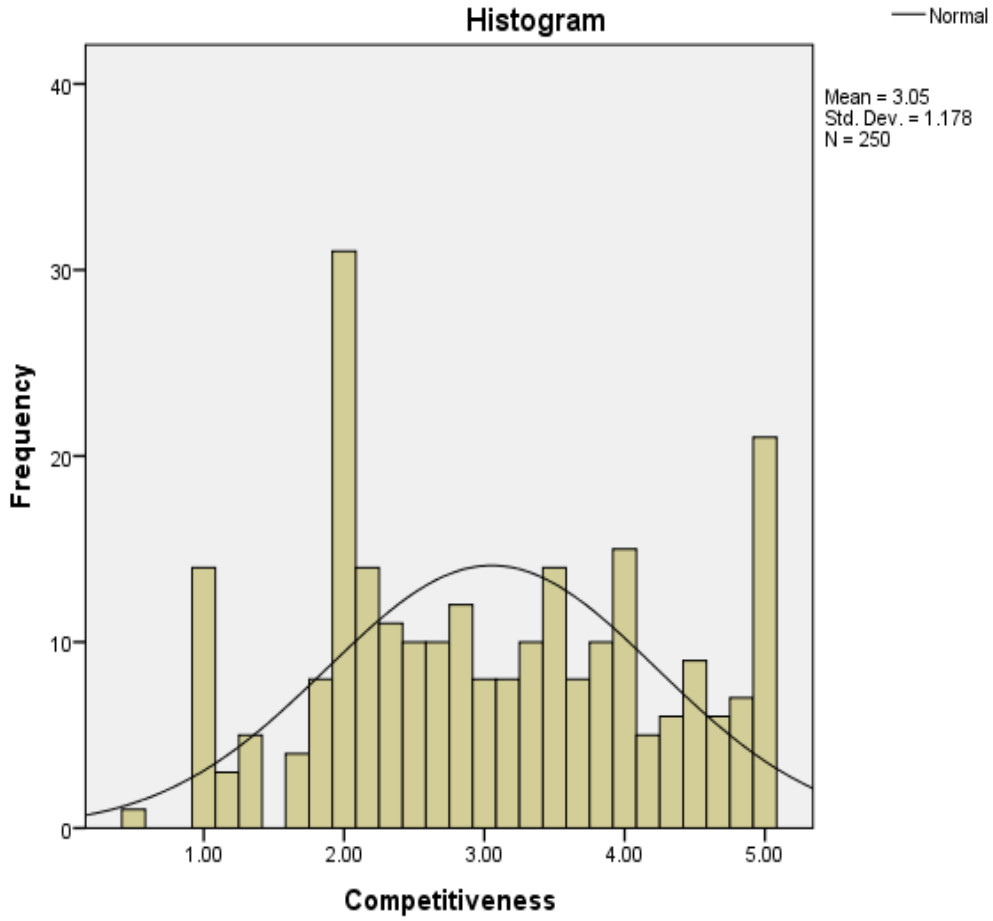

Figure 14: Histogram: Level of competitiveness

According to the results in Table 26, the p-value (Sig.) for the level of competitiveness was <0.05, therefore the level of competitiveness was not normally distributed, as indicated in Figure 14. As a result, a non-parametric test was used. In order to identify whether a relationship exists, the Spearman's Rank Order correlation (rho) test was used. No alternative non-parametric tests were available for the regression analysis; therefore, the simple regression analysis was used.

4.6 Descriptive statistics

This section presents a summary of the Likert scale questions. The response scale used is ordinal. The categories used are strongly disagree (1), disagree (2), neutral (3), agree (4) and strongly agree (5). The results are presented in two tables per section. The first table is the percent of responses per category and the second table presents the mean and standard deviation of each question perceived service quality on all respondents – descriptive (n = 250).

4.6.1 ICT Utilisation

Table 27: Likert scale: ICT utilisation

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	Row N percent	Row N percent	Row N percent	Row N percent	Row N percent
B11 My business has access to ICT technology	7.2%	19.2%	9.6%	40.8%	23.2%
B12 The surrounding businesses provide my business with ICT access	45.2%	26.4%	12.4%	12.8%	3.2%
B13 I frequently use the internet cafe to support my business	43.2%	26.8%	12.8%	10.8%	6.4%
B14 I frequently use mobile money transfer service with my suppliers to conduct business	42.8%	16.0%	8.8%	24.0%	8.4%
B15 I frequently use emails to communicate with my clients	45.6%	19.2%	6.8%	16.8%	11.6%
B16 My business has a monthly budget for ICT technology utilisation	36.8%	26.4%	12.8%	10.8%	13.2%
B17 I frequently use ICT technology to conduct my business banking	20.8%	30.4%	23.2%	18.0%	7.6%

Table 28: Mean and standard deviation: ICT utilisation

Statement	Mean	Standard deviation
B11 My business has access to ICT technology	3.54	1.239
B12 The surrounding businesses provide my business with ICT access	2.02	1.175
B13 I frequently use the internet cafe to support my business	2.10	1.250
B14 I frequently use mobile money transfer service with my suppliers to conduct business	2.39	1.445
B15 I frequently use emails to communicate with my clients	2.30	1.470
B16 My business has a monthly budget for ICT technology utilisation	2.37	1.409
B17 I frequently use ICT technology to conduct my business banking	2.61	1.215

The results in Table 28 indicated that the 250 respondents agreed that their businesses have access to ICT technology, as represented by the mean of 3.54.

The respondents were in disagreement but leaning towards being neutral about having access to ICT, ICT being provided to their business by surrounding business. In addition the frequent use of internet cafes, money transfer services, email communications, having a monthly budget for ICT utilisation, and using ICT technology to conduct business banking, represented by mean scores that ranged between 2.02 and 2.61.

4.6.2 Financial performance

Table 29: Likert scale: Financial performance

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	Row N percent	Row N percent	Row N percent	Row N percent	Row N percent
C18 The use of ICT technology increases the profitability of a business	7.6%	25.6%	28.8%	24.8%	13.2%
C19 The use of ICT technology improves productivity	10.0%	22.8%	22.0%	24.0%	21.2%
C20 The use of ICT technology makes it easier to perform some tasks in the business	11.2%	26.0%	22.8%	22.8%	17.2%
C21 The current cost of ICT utilisation is a hindrance to my business performance	16.4%	41.6%	15.2%	15.2%	11.6%
C22 The use of ICT knowledge can assist with my business performance	12.0%	16.4%	24.8%	26.4%	20.4%
C23 By having access to ICT technology it will assist me to improve my business records for business performance	15.2%	20.4%	27.6%	21.2%	15.6%
C24 Registering my business with the South African Revenue Services is important to my business performance	10.4%	29.6%	20.8%	20.4%	18.8%
C25 Registering my business with the Department of Trade and Industry is important to my business performance	12.8%	27.6%	25.2%	18.4%	16.0%

Table 30: Mean and standard deviation: Financial performance

Statement	Mean	Standard deviation
C18 The use of ICT technology increases the profitability of a business	3.10	1.153
C19 The use of ICT technology improves productivity	3.24	1.291
C20 The use of ICT technology makes it easier to perform some tasks in the business	3.09	1.274
C21 The current cost of ICT utilisation is a hindrance to my business performance	2.64	1.251
C22 The use of ICT knowledge can assist with my business performance	3.27	1.288
C23 By having access to ICT technology it will assist me to improve my business records for business performance	3.02	1.286
C24 Registering my business with the South African Revenue Services is important to my business performance	3.08	1.292
C25 Registering my business with the Department of Trade and Industry is important to my business performance	2.97	1.272

Table 30 indicates that the 250 respondents disagreed but were leaning towards being neutral about ICT increasing the profitability of their business, improving productivity, and the current cost of ICT utilisation being a hindrance to the performance of the business.

They felt similarly about ICT making it easier to perform some business tasks, improving business records for business performance, registering business with the South African Revenue Services being important in the performance of the business, and registering a business with the Department of Trade and Industry having a positive influence on the performance of the business. This was represented by the mean scores, which ranged from 2.64 to 3.27.

4.6.3 Level of service

Table 31: Likert scale: Level of service

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	Row N percent	Row N percent	Row N percent	Row N percent	Row N percent
D26 The use of ICT technology improves the quality of products offered	6.0%	27.2%	23.2%	30.0%	13.6%
D27 The use of ICT technology improves the level of customer service offered	10.0%	20.8%	24.0%	27.6%	17.6%
D28 The use of ICT technology helps to communicate better with customers	12.4%	22.8%	19.2%	25.2%	20.4%
D29 The use of ICT technology leads to creation of new products offered	12.0%	28.4%	22.0%	24.8%	12.8%
D30 The use of ICT technology will help save on travelling costs	10.8%	31.2%	18.8%	25.6%	13.6%
D31 I have a vision to grow my business into a formal business	8.4%	7.6%	16.8%	27.6%	39.6%

Table 32: Mean and standard deviation: Level of service

Statement	Mean	Standard deviation
D26 The use of ICT technology improves the quality of products offered	3.18	1.153
D27 The use of ICT technology improves the level of customer service offered	3.22	1.243
D28 The use of ICT technology helps to communicate better with customers	3.18	1.329
D29 The use of ICT technology leads to creation of new products offered	2.98	1.237
D30 The use of ICT technology will help save on travelling costs	3.00	1.245
D31 I have a vision to grow my business into a formal business	3.82	1.265

Table 32 indicates that the 250 respondents, were neutral about the use of ICT technology leading to the creation of new products offered, represented by the mean of 2.98. The respondents were in agreement with the use of ICT technology improving the quality of products offered, the level of customer service offered, saving on travelling costs, being a better means of communication with customers, and because of ICT, respondents agreed that they have a vision to grow their businesses into a formal business. This was represented by the mean scores, which ranged between 3.00 and 3.82.

4.6.4 Level of competiveness

Table 33: Likert scale: Level of competitiveness

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	Row N percent	Row N percent	Row N percent	Row N percent	Row N percent
E32 The use of ICT technology increases my customer base	9.2%	20.8%	26.4%	24.8%	18.8%
E33 Having access to ICT technology will allow me to save on operating costs of my business	10.0%	29.6%	26.4%	19.6%	14.4%
E34 Having access to ICT technology will assist me to use social media for my business	20.4%	28.8%	12.8%	22.0%	16.0%
E35 Having ICT access positions my business better with my customers	12.8%	22.8%	26.4%	19.2%	18.8%
E36 Having ICT provides my business with a competitive advantage from my competitors	10.8%	25.6%	21.6%	21.6%	20.4%
E37 My business is better positioned in making future decisions by having access to ICT technology	11.6%	25.6%	25.6%	18.0%	19.2%

Table 34: Mean and standard deviation: Level of competitiveness

Statement	Mean	Standard deviation
E32 The use of ICT technology increases my customer base	3.23	1.236
E33 Having access to ICT technology will allow me to save on operating costs of my business	2.99	1.214
E34 Having access to ICT technology will assist me to use social media for my business	2.84	1.396
E35 Having ICT access positions my business better with my customers	3.08	1.298
E36 Having ICT provides my business with a competitive advantage from my competitors	3.15	1.305
E37 My business is better positioned in making future decisions by having access to ICT technology	3.08	1.292

Table 34 indicates that the 250 respondents were in disagreement but are leaning strongly towards being neutral about having ICT will aid them to use social media for business purposes and essentially allow them to save on operating costs, represented by mean scores that ranged from 2.84 to 2.99.

However, the respondents were in agreement that with the use of ICT their businesses are better positioned to make future decisions, have a competitive advantage, and increase the client base, represented by the mean scores that ranged from 3.08 to 3.23.

4.7 Correlation analysis

A correlation analysis is used to measure the strength of relationships through correlation coefficients, as indicated by Pallant, (2005). Thus, the Spearman's Rank Order Correlation (rho) indicates strength and direction (negative or positive) of the correlation, while the p–value indicates the probability that a certain given rho–value is seen only by chance.

4.7.1 Correlation between ICT utilisation and financial performance

Table 35: Correlation between ICT utilisation and financial performance

Test	Correlation
Spearman's rho correlation	.701**
P Value (2-tailed)	.000
N	250

Table 35 shows the relationship between ICT utilisation and financial performance, which was investigated using the Spearman's correlation. Preliminary analyses were performed to ensure no violation of the assumptions of normality and linearity. There was a strong positive correlation between ICT utilisation and financial performance, rho= 0.701, n=250, p<0.000, with high levels of ICT utilisation associated with high levels of financial performance.

4.7.2 Correlation between ICE utilisation and level of service

Table 36: Correlation between ICT utilisation and level of service

Test	Correlation
Spearman's rho correlation	.742**
P Value (2-tailed)	.000
N	250

Table 36 shows the relationship between ICT utilisation and service, which was investigated using the Spearman's correlation. Preliminary analyses were performed to ensure no violation of the assumptions of normality and linearity. There was a strong positive correlation between ICT utilisation and the level of service, rho= 0.742, n=250, p<0.000, with high levels of ICT utilisation associated with high levels of service.

4.7.3 Correlation between ICE utilisation and competitiveness

Table 37: Correlation between ICT utilisation and competitiveness

Test	Correlation
Spearman's rho correlation	.787**
P Value (2-tailed)	.000
N	250

Table 37 shows the relationship between ICT utilisation and competitiveness, which was investigated using the Spearman's correlation. Preliminary analyses were performed to ensure no violation of the assumptions of normality and linearity. There was a strong positive correlation between ICT utilisation and the level of competitiveness, rho= 0.787, n=250, p<0.000, with high levels of ICT utilisation associated with high levels of competitiveness.

4.7.4 Correlation between ICT utilisation and; improved visibility and product/service information

Table 38: Correlation between ICT utilisation and; improved visibility and product/service information

Test	Correlation
Spearman's rho correlation	.786**
P Value (2-tailed)	.000
N	250

Table 38 shows the relationship between ICT utilisation and; improved visibility and product/service information, which was investigated using the Spearman's correlation. Preliminary analyses were performed to ensure no violation of the assumptions of normality and linearity. There was a strong positive correlation between ICT utilisation and the level of improved visibility, product/service information, rho= 0.786, n=250, p<0.000, with high levels of ICT utilisation associated with high levels of improved visibility, product/service information.

4.8 Testing of hypotheses

4.8.1 H1: Financial performance and ICT utilisation

Table 39: Regression analysis: H1

Variable	B	SEB	β	t	P Value	R^2
ICT Utilisation	.690	.045	.699	15.413	.000	.489

Dependent variable: Financial performance

Simple regression was performed to assess the relationship between financial performance and ICT utilisation. Table 38 shows a statistically significant relationship between financial performance and ICT utilisation. The coefficient (β=0.699) indicated that a positive relationship existed. The financial performance represented by the coefficient of determination (R2=0.489), explained 49 percent of the variance in ICT utilisation.

4.8.2 H2: Service and ICT utilisation

Table 40: Regression analysis: H2

Variable	B	SEB	β	t	P Value	R^2
ICT Utilisation	.735	.043	.735	17.094	.000	.541

Dependent variable: Level of service

Simple regression was performed to assess the relationship between the level of perceived service and ICT utilisation. Table 39 shows a statistically significant relationship between the level of service and ICT utilisation. The coefficient (β=0.735) indicated that a positive relationship existed. The level of service represented by coefficient of determination (R2=0.541), explained 54 percent of the variance in ICT utilisation.

4.8.3 H3: Competitiveness and ICT utilisation

Table 41: Regression analysis: H3

Variable	B	SEB	β	t	Sig	R^2
ICT Utilisation	.892	.043	.796	20.708	.000	.634

Dependent variable: Level of perceived competitiveness

Simple regression was performed to assess the relationship between the level of perceived competitiveness and ICT utilisation. Table 40 shows a statistically significant relationship between the level of competitiveness and ICT utilisation. The coefficient (β=0.796) indicated that a positive relationship existed. The level of competitiveness represented by coefficient of determination (R2 = 0.634), explained 63 percent of the variance in ICT utilisation.

4.8.4 H4: Improved visibility, product/service information and ICT utilisation:

Table 42: Regression analysis: H4

Variable	B	SEB	β	t	Sig	R^2
ICT Utilisation	.806	.040	.787	20.079	.000	.619

Dependent variable: Improved visibility and product/service information

Simple regression was performed to assess the relationship between the level of perceived improved visibility and product/service information and ICT utilisation. Table 42 shows a statistically significant relationship between the level of improved visibility and product/service information and ICT utilisation. The coefficient (β=0.787) indicated that a positive relationship existed. The level of Improved visibility and product/service information represented by coefficient of determination (R^2 = 0.619), explained 62 percent of the variance in ICT utilisation

4.9 CONCLUSION

This chapter presents an analysis of the findings from the collected data. Quantitative methods in the data analysis were discussed, and the steps involved in carrying out factor analysis, presented. Principal component analysis and the role it plays in determining the relationships between the factors are also considered. Chapter 5 is a discussion of the results that have been obtained from the field.

CHAPTER 5: DISCUSSION OF THE RESULTS

5.1 Introduction

While Chapter 4 presents the data collected in the field, Chapter 5 discusses the results. This chapter starts by discussing demographic factors that affect the adoption of ICT by informal traders in the study area. Issues of the business ownership and devises used are discussed, including the link between ICT and informal traders.

The chapter then focuses on the findings of the research pertaining to the respective four hypotheses and research questions and describes how the outcome of the research supports the literature review. The chapter weaves the findings of the study in relation to the accepted hypotheses.

5.2 Demographic characteristics of the sample

5.2.1 Gender

Gender has been found to be important in determining participation in the informal sector, and subsequently has an effect on the adoption of ICTs. Men dominate in informal sector participation in this study. The fact that only 34 percent of the respondents in the study were women is in line with what is found in informal sectors elsewhere in the world.

The literature review indicated that most informal sector activities tend to be male dominated except for retailing, salons and eateries (Gikenye, 2014; Opiyo & K'Akuma, 2006). The GEM report of 2012 (Turton & Herrington, 2013) reported that there were disparities between the prevalence of men and women in entrepreneurship. The report concluded that in South Africa this disparity was higher than elsewhere. More men than women participate in informal sector activities. Jiyane and Mostert (2010) found that most women participating in

informal sector activities were between 40 and 49 years of age. This is consistent with situations all over the world where males tend to dominate in most income generating activities.

The mean age of how long the business had been operating was found to be five years. This indicated that the sector has been contributing to the livelihoods of informal sector operators for quite some time and as such it cannot be ignored as a livelihood strategy.

5.2.1 Education level

Education levels would easily determine whether a person participates in the informal or formal sector. The higher the level of education a person has, the higher the chances that they would have access to employment in the informal sector. In this study, over 52 percent of the respondents had matric while 30 percent of the respondents reported having attended secondary education. Only eight percent of the respondents had tertiary levels of education. This is in agreement with what Opiyo and K'Akumu (2006), who stated that many participants in the informal sector underwent some form of formal education.

The high number of respondents who have matric is particularly striking. This illustrates the fact that there are high levels of unemployment in the country, leading most participants to seek income-earning opportunities in the informal sector.

Better education leads to higher levels of adoption of ICT devices. As observed by Garcia-Murilla and Velez-Aspina (2014), the more educated the informal sector operators are, the better they are able to adopt new technologies than do their less educated counterparts.

On the other hand, people with low education levels might face a serious challenge when adopting ICT as the predominant language of use in the ICT world is English. The information and communication potential for this group of users might thus be low (Gikenye, 2014; Jiyane & Mostert, 2010; Opiyo & K'Akumu, 2006).

The fact that over 52 percent of the respondents have at least a matric level of education shows that many informal sector participants have the ability to use ICTs to boost their businesses.

5.2.3 Turnover and business type

The respondents were asked to comment on their monthly turnover from their informal sector businesses. The average monthly ranged from R900 to over R200 000. The wide range of income can be attributed to the type of informal activity that the respondents carry out.

In general, the study found out that those activities that were in the construction or motor vehicle servicing sector had high turnovers when compared to street retailing. Gikenye (2014) indicated that many informal sector participants would have meagre earnings from their activities as the sector is a survivalist strategy for many vendors.

5.3 Ownership and devices used

The GEM report of 2013 (Herrington & Kew, 2014) indicated that entrepreneurs are people who see opportunities in their environments and respond to them. Most of the respondents in the study were the owners of businesses. The data indicated that 66 percent of the respondents owned businesses, while 15.6 percent were co-owners. Hence, many small businesses are set up and run by their owners. The study findings also indicated that 49 percent of the respondents did not get any assistance from others in setting up their businesses, while similar percentages were assisted by either friends or family. The fact that most of the businesses are self-owned agrees with the literature.

When the respondents were asked who assisted them to start their businesses, 49.2 percent of the respondents stated that they had started the businesses themselves. Over 28 percent of the respondents had been assisted by their families, while over 11 percent had been assisted by friends.

Starting any form of business requires some form of start-up capital. This can come from the savings of an individual or in the form of loans from friends and family.

Opiyo and K'Akumu (2006) found out that most informal sector operators would start their operations with small amounts of capital usually obtained from either their own savings or from family members or friends. The findings from this study indicate that the same applies to the respondents.

Boateng (2011) recognised the importance of mobile phones by informal sector operators in enhancing the performance of their businesses. The devices most commonly used for accessing information were smart phones and tablets. These accounted for 77 percent, while 16.3 percent of respondents used PCs. This finding is hence in line with the literature

5.4 Utilisation of ICT and informal traders

This study found there was a positive relationship between the perceptions of ICT utilisation and increasing levels of service in the sector. As discussed in the literature review, in many African countries this sector accounts for close to 80 percent of total employment.

The increasing competition among informal sector operators implies that in order to succeed and improve performance, new methods of conducting business have to be employed. The use of ICT would provide a competitive advantage to those operators who are ready to adopt devices that will give them access to sufficient and relevant information about the products they are dealing in and the nature of their markets.

There is a need for a shift in thinking by policy makers and relevant local authorities to provide skills and assistance to the sector participants, thus improving the performance of their businesses.

The use of ICT, especially mobile phones, will enable informal sector operators to access products at cheaper prices and sell them with a good profit margin. Woodward et al. (2010) argued that informal sector traders play a key role in facilitating breaking bulk and providing goods and services at convenient and accessible points. In addition, Woodward et al. (2010) contended that small-scale traders add value to the goods by reducing transaction costs, thus making particular items available to customers at cheaper prices.

The fact that the operators tend to locate their businesses at convenient points, which have high numbers of potential passing trade, enable the sector to move to higher volumes of goods. This visibility is paramount in their operations and mobile phones can be used for reporting purposes. Due to the informality and sometimes illegality of the businesses, the traders are able to communicate among themselves when it is convenient to set up stalls and when it is not, especially when the police are enforcing by-laws. This will ensure the safety of their products and in the process avoid unnecessary losses.

The study has shown that here is a relationship between adoption of ICT and increased business performance. This is in line with Modimogale and Kroeze (2009), who state that one of the key enablers of increased efficiency and performance in the informal sector is the adoption of ICT. Most of the informal sector operators had mobile phones, which were used to network among themselves and with suppliers and customers. This enabled these informal sector operators to increase their turnover through better knowledge of supplier and customer conditions.

Accessing the internet could streamline this sector’s operations. This is in line with Marnewick’s (2014) suggestion, that increased uptake of ICT in the sector can assist in streamlining the operations, helping it to grow and become more profitable.

5.5 Hypothesis discussion

5.5.1 Hypothesis 1 discussion

This study set out to investigate whether there is a relationship between perceptions of ICT utilisation and increasing financial performance within the informal sector in the Sandton region. In the literature review it was established that ICT was able to facilitate informal businesses to save money, compare prices, respond to customers at a faster rate, reduce travel times and acquire or retain new customers (Donner, 2007; Gillwald et al., 2013). All these factors relate to increased financial performance in the informal sector.

This study established that there is a positive relationship between the perceptions that ICT can increase financial performance for the informal sector businesses. This is in line with literature; Chew et al. (2010) established that ICT in the form of mobile phones could spur the growth and development of informal sector activities through the value chain core.

ICT could be used for improving the operation of the business, for example through improved book keeping, keeping track of supply, inventory control etc. Based on the literature review and the data analysis, it could be concluded that if informal sector operators adopt ICT, there would be improvement in the financial positions of their businesses.

There is a positive relation between perceptions of ICT utilisation and increasing financial performance within the informal traders in the Sandton region. Hypothesis 1 states that there is a positive relation between perceptions of ICT utilisation and positive financial performance within the informal businesses in the Sandton region. The performance scale was a five-point Likert scale. Descriptive testing provided an M=3.03, which suggested that the average respondent was neutral to the perception that ICT utilisation has a positive impact on the financial performance. The utilisation of ICT and perceived effects on increasing financial performance within the informal businesses were positively correlated via Spearman's rho, $r(250) = 0.701$, $p < .000$, as well as a

simple regression, β 0.699. The coefficient correlation had a small effect, $p < 0.05$ hence the hypothesis was adopted.

The findings are consistent with the literature review in terms of ICT utilisation and the perceived effects on financial performance of informal traders within the Sandton region. Utilisation of ICT will result in improved information flow hence increasing performance of the sector. As was noted earlier in the literature, Bhagwat and Sharma (2006) indicated that information flow in business is the lifeblood of an enterprise. The addition of technology that will enhance this flow of information should have a positive impact on the performance of the business resulting in efficiency and higher profits.

5.5.2 Hypothesis 2 discussion

Another aspect that this study was interested in was to find out whether there was a relationship between perceptions of ICT utilisation and increasing levels of service offered by the informal sector operations in the Sandton region. In the literature review, it was established that many people who cannot find employment in the formal sector resort to the informal sector as a survivalist strategy. Chan (2008) observed a common aspect found in many informal sector operations was that many traders offered the same goods and services in close proximity to each other, reflecting a copycat mentality. In addition, most of these businesses relied on intermediaries for sourcing goods and other inputs needed for their operations. Gikenye (2014) argued that the informal sector traders in many cases lacked proper information and knowledge about sourcing materials and obtaining proper market information of the products and services that they dealt in.

Information on knowledge of the supply and market aspects is crucial in determining what kind service and products the informal sector operators offer to their customers. This study established that there was a positive relationship between the perceptions of ICT utilisation and increased levels of service among informal sector traders in Sandton. Use of ICT would have a positive impact on

the type of services offered, as the operators would be able to identify which product or service is in demand and be able to offer such when needed.

There is a positive relation between perceptions of ICT utilisation and increasing level of service offered by informal traders in the Sandton region. Hypothesis 2 states that there is a positive relation between perceptions of ICT utilisation and the level of service offered by the informal businesses in the Sandton region. The performance scale was a five-point Likert scale. Descriptive testing provided an M=3.22, which suggested that the average respondent was neutral to the perception that ICT level utilisation has a positive impact on the level of service. The utilisation of ICT and its perceived effects on increasing the level of service within the informal businesses were positively correlated via Spearman's rho, r (250) = 0.742, p < .000, as well as simple regression, β 735. The coefficient correlation had a small effect, p <0.05 hence the hypothesis was adopted.

The findings are consistent with the literature review in terms of ICT utilisation and the perceived effects on the level of service offered by informal businesses within the Sandton region. Donner (2007), Duncomb and Molla (2009), and Kaba et al. (2009) all recognised the effect ICT would have on the improvement/expansion of informal sector businesses. They argued that the sector could be enhanced by the provision of vital information, business skills and access to the collective wisdom of the many players involved in the sector.

5.5.3 Hypothesis 3 discussion

The relationship between the perception of ICT utilisation and increasing levels of competitiveness was a focus of this study. The literature review indicated that many unemployed individuals find the informal sector to be an attractive source of income as it is relatively easy to enter, requires minimum capital and equipment, and can accommodate a small, single person operation (Charmes, 2000).

The sector does not require that the operator possess high formal skill sets. Thus, young people who are in need of employment resort to joining the sector.

The result is that many people offer the same products and services and compete in a limited market.

The adoption of ICT to assist businesses could be reflected as various extents of technological capabilities and requirements that enable the operators to store, build value and apply the knowledge that they have gained to help them become more competitive. The result would be an increase in the exchange of vital information, which assists the businesses to provide goods and services at competitive prices. Matambalya and Wolf (2001) suggest that the use of ICT could increase the competitiveness of informal sector operators, enabling the creation of more flexible levels with trading partners, which could result in faster and more reliable communication channels.

This study established that there was a positive relationship between ICT utilisation and level of competitiveness within the informal sector in the Sandton region. As the informal sector traders adopt ICT, they were able to identify in which areas they would be able to gain competitive advantage over others.

The information available, using ICT, about supply and demand issues can make their businesses more competitive, hence improving incomes. Hypothesis 2 states that there is a positive relation between perceptions of ICT utilisation and positive level of competitiveness within informal traders in the Sandton region. The performance scale was a five-point Likert scale.

Descriptive testing provided an M=3.05, which suggests that the average respondent are neutral to the perception that ICT level utilisation has a positive effect on the level of competitiveness. The utilisation of ICT and perceived effects on the level of competitiveness within the informal businesses were positively correlated via Spearman's rho, $r(250) = 787$, $p < .000$, as well as a simple regression, β 0.699. The coefficient correlation had a small effect, $p < 0.05$ hence the hypothesis is adopted.

The findings are consistent with the literature review in terms of ICT utilisation and the perceived effects on the level of competitiveness within informal businesses in the Sandton region.

According to Kramer, Jenkins and Katz, (2007), ICT increases efficiency, productivity and access to goods, services, information and markets and with these benefits being high, the demand for ICT is also high among low income individuals. This could revolutionise the way these businesses conduct their activities. The result would be increased competitiveness, which would then have a direct impact on the performance and profitability of these entities.

5.5.4 Hypothesis 4 discussion

Another aspect that this study wanted to investigate was to find out whether there was a positive relationship between the application of ICT and improved visibility of the products/services offered to customers. Esselaar et al. (2007) posited that most informal sector activities tend to be located in areas where there are large populations.

The Sandton CBD is an area that hosts many corporate institutions, and is close to Alexandra, which is an informal settlement with a very large population. As Chew et al. (2014) suggest, this can be advantageous to informal sector operators who adopt ICT as it can result in value chain support.

This means that the informal traders, apart from accessing information on supply and demand could connect on social networks and build social capital with other business people or clients, hence making their products and services more visible.

The performance scale was a five-point Likert scale. This scale was derived from the combination of the items from the level of service and level of competitiveness scales.

Descriptive testing provided an M=3.12, which suggests that the average respondent are neutral to the perception that ICT level utilisation has a positive effect on the level of improved visibility and product/service information.

The utilisation of ICT and perceived effects on the level of improved visibility and product/service information within the informal businesses were positively

correlated via Spearman's rho, r (250) = 0.786, p < .000, as well as a simple regression, β 0.619. The coefficient correlation had a small effect, p <0.05 hence the hypothesis is adopted.

This study has proved that there is a positive relationship between adoption of ICT and improved visibility of products and services. In the Sandton region, just like in many other areas of Gauteng and South Africa, it is common to find informal sector services, activities and products being advertised on street lighting poles, on road signposts, on walls and electric meter boxes. Such advertisements include services offered like gardening, car washes, thatching, medicines, tarmacking of driveways, electric implement repairs, hair salons etc.

It is also common to find people at street corners and busy intersections and traffic lights handing out fliers that advertise products and services. A prominent feature of these advertisements is a mobile number for contacting the business operator. This is an indication that adoption of ICT is enabling the informal sector traders to make their services more visible, thus reaching more people.

Informal business ICT application can be positively associated with improved visibility and product/service information, to attract and retain customers. This study established that there is increasing uptake of ICT in the informal sector, resulting in improved performance and assisting in the growth and success of informal sector activities.

The primary form of ICT adoption in the sector is through mobile phones. The mobile phone enables the traders to keep in touch with their clients. Mobile phones also enable the informal sector operators to keep in touch with suppliers and get to know the general market trends including pricing and availability of particular products and services.

5.6 Conclusion

The four hypotheses presented in this research paper proved the perceived relationship between ICT utilisation and its perceived effects on business

performance, market share, and customer service. The perceived increase in ICT utilisation levels translates into improved performance.

This chapter discusses the importance of ICT in improving the performance of the informal sector. This is done in the context of the hypotheses generated to guide the study. The characteristics and importance of the informal sector in economies is discussed.

The findings positively correlate across the different hypotheses, with the majority of the mean scores being ‘fully agree’, which could indicate that informal businesses in the Sandton region need to evaluate the importance of ICT utilisation on business performance. The two sub-problems stated in section 1.4.1 and 1.4.2 also have support and can be considered solved.

The findings of this research paper are consistent with the literature review. Chapter 6 provides the conclusion, implications and recommendations of the study.

CHAPTER 6: CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter provides a discussion on the conclusion of the study as well as the recommendations identified, based on the outcome of this research paper. The suggestions for further research are noted.

6.2 Summary of the literature review

The literature review examines the influence of ICT interventions on the performance of small-scale businesses in the informal sector. It provides a conceptual model on the role ICT can play in improving small-scale business enterprises in the informal sector. The literature review argues for the need to integrate ICT operations, thus creating operational advantages that would result in higher earnings for those participating in the sector.

A gap was identified in the literature available showing that work on the particular role ICT plays in improving performance in the sector is lacking. It emerged that proper information flow in the sector could be enhanced by the use of ICT, especially mobile devices, thus improving performance for individual business.

A key indication in the literature was that the informal sector has become a major employer for those who have been retrenched or are unable to access formal sector jobs. Since the sector plays a key role in improving livelihoods, its growth and expansion has to be encouraged and streamlined by making it more efficient. This could be done by the introduction of affordable ICT devices, of which the mobile phone is the most obvious choice. Streamlining of the informal sector by making possible an enabling environment that would result in its fast expansion then becomes important.

The role mobile phones can play, as an aspect of ICT, is to enable information flow particularly pertaining to the demand for specific goods and services. ICT could serve as a means of making known the location and demand of services to the informal traders, resulting in improved performance. It emerged from the literature a correlation between the use of mobile phones and improved profits in the informal sector. Mobile phones hold great potential to improve the sector as they enable fast information flow, are cheap and affordable and can act as the ideal communication medium for these operators.

Gender, age and education aspects in relation to ICT and the informal sector were discussed. It emerged from the literature that age and gender play a significant role in ICT adoption and use. Younger persons were more likely to adopt ICT than were older people. In addition, more men than women participate in the informal sector, while the more educated individuals are, the more they are likely to adopt ICT for use in their daily operations.

6.3 Summary of results

The results of the study indicated that a strong relationship between utilisation of ICT and improvement in performance in the informal sector. Once adoption of ICT by people involved in the sector occurs, crucial information on goods and services offered can be obtained, which results in higher sales and increased income.

There is a relationship between perception of ICT utilisation and the level of services offered. The use of mobile phones in the daily running of these informal sector businesses enables the traders to know which goods and services are available and which ones are in demand, so that they are able to adjust their businesses accordingly.

The use of ICT has increased the competitiveness among informal sector operators. This is because all participants become aware of the supply and demand of whatever product or service that they offer. This results in higher levels of service and increased competition.

Table 43: Summary of Hypothesis results

Hypothesis	Summary of results
H1	Proven, there is a positive relation between perceptions of ICT utilisation and increased financial performance of the informal traders in the Sandton region.
H2	Proven, there is a positive relation between perceptions of ICT utilisation and an increasing level of service offered by informal traders in the Sandton region.
H3	Proven, there is a positive relation between perceptions of ICT utilisation and an increasing level of competitiveness of informal traders in the Sandton region.
H4	Proven, there is a positive relation between the levels of ICT utilisation and improved visibility and product/service information of informal traders in the Sandton region

6.4 Limitations

A major problem encountered during the course of the study was the difficulty in persuading informal sector operators in the area to take part in the study. Many of the respondents wanted to know the purpose of the study and if there were rewards associated with participation.

The study limited itself to a population of informal sector operators in the Sandton region. The sampling method employed was convenience sampling. This meant that the study had certain biases and that the results obtained might not be representative of the whole population. The findings of the study might not apply to other urban areas of South Africa due to the small sample size used.

6.5 Recommendations and implications

The significance of this study was that it provided insight into the perceptions of informal traders in the Sandton region, and the influence on business performance on the adoption of ICT interventions. The outcome of the study

demonstrated that the average respondent perceived the influence of ICT interventions to have a positive impact on business performance.

The outcome of this research provided insight into the ICT usage of informal traders' in the Sandton region, their general ICT usage and customer communication. This trend suggests that the informal businesses find it important to have access first to mobile phones, followed by ICT capabilities to keep in contact with their regular customers. The challenge was to understand why ICT adoption and business performance in the informal businesses in this study did not yield an overwhelming correlation. The reasons could be many.

Further studies could:

- Identify all possible variables that may improve the perceived adoption of ICT interventions would be beneficial and could result in a positive impact on business performance;
- Extend the current research by expanding the sample of informal businesses across the major cities of South Africa is recommended;
- Expand on the informal business owner's intention to adopt ICT; and
- Explore the adoption of ICT within micro enterprises.

There is a need to ensure that the policy responses of government to the informal sector are appropriate and address the constraints and risks faced by participants in the sector. Efforts should be made by the relevant authorities to improve measurements of the contribution of the informal sector to the national economy.

There is need for a new paradigm that recognises the importance of the informal sector, so that participants can operate without hindrance. Encouragement of informal sector workers to adopt ICT technology to assist their businesses should also be encouraged, as this will assist in improving the performance of the sector.

6.6 Conclusion

The current research was a combination of ICT and its perceived benefits, i.e. the research focused on the ICT interventions being utilised and the perception of how successful the intervention of ICT usage is on the informal business.

The influence of ICT interventions on the performance of informal traders in the Sandton region revealed some findings consistent with the existing literature, in terms of the accepted perception that ICT adoption has a positive impact on business performance. This impact is not limited to increasing sales, better customer service, sustained market share etc., as measured in the research.

The literature mentions that adoption of ICT by informal traders has not produced the expected adoption rates due to barriers, such as the cost of ICT accessibility and lack of skills and understanding to implement the technology fully. The perceived barriers to entry are seen as a further hindrance to ICT adoption by informal business.

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APPENDIX A

Letter to respondents



Wits Business School

Dear respondent

I am WBS (Wits Business School) part time student currently doing a Masters of Management in Entrepreneurship and New Venture Creation and conducting a research for my research dissertation.

This survey measures the influence of ICT interventions on the performance of informal businesses in the Sandton region and the utilisation of ICT in your business.

Can you kindly participate and provide time from your business to respond to the short survey, which requires your precise answers to the questions.

Please note that your privacy will be maintained and the results are to be used for strictly used for study and academic purposes only. Your anonymity will be maintained because no personal details are required.

Your participation in this survey is greatly appreciated.

Thank you.

Yours Sincerely

Nirindra Chetty

Student Number: 585625

Wits Business School

University of the Witwatersrand

APPENDIX B

Research instrument

Research Survey Questionnaire:

Master's Degree University of Witwatersrand

Nirindra Chetty

The following questions will assist me in understanding your business and your ICT capabilities. Please can you place a cross (X) in the block that best represents you and your business.

SECTION A

The following questions will help me find out more about you and your business.

1. What is your gender?

Male		Female	

2. What is your age in years? _____ Years

3. What is your highest level of education?

None	
Primary School	
Secondary School	
Matric	
Tertiary	

What best describes your role at this outlet?

Owner	
Co-owner	
Employee	
Other	

4. Who assisted you in creating the business?

Yourself	
Your family	
A friend	
Other	

5. What is the age of your business? _____Years

6. How many people do you employ in your business? _____ People

7. What is your average monthly turnover (in rands)? R_____

8. What services do you offer/what do you sell?

9. Which ICT devise(s) are you currently utilising in this business?

Smart phone	
Normal phone	
Tablet	
PC	
Other devise	

SECTION B

The following questions will assist me to find out about the ICT utilisation in your business.

Statement		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
11.	My business has access to ICT technology					
12.	The surrounding businesses provide my business with ICT access					
13.	I frequently use the Internet café to support my business					
14.	I frequently use mobile money transfer services with my suppliers to conduct business					
15.	I frequently use emails to communicate with my clients					
16.	My business has a monthly budget for ICT technology utilisation					
17.	I frequently use ICT technology to conduct my business banking					

SECTION C

The following questions will assist me to find out about the financial performance in your business.

Statement		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
18.	The use of ICT technology increases the profitability of a business					
19.	The use of ICT technology improves productivity					
20.	The use of ICT technology make it easier to perform some tasks in the business					
21.	The current cost of ICT utilisation is a hindrance to my business performance					
22.	The use of ICT knowledge can assist with my business performance					
23.	By having access to ICT technology it will assist me to improve my business records for business performance					
24.	Registering my business with the South African Revenue Services is important to my business performance					
25.	Registering my business with the Department of Trade and Industry is important to my business performance					

SECTION D

The following questions will assist me to find out about the level of service in your business.

Statement		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
26.	The use of ICT technology improves the quality of products offered					
27.	The use of ICT technology improves the level of customer service offered					
28.	The use of ICT technology helps to communicate better with customers					
29.	The use of ICT technology leads to creation of new products offered					
30.	The use of ICT technology will help save on travelling cost					
31.	I have a vision to grow my business into a formal business					

SECTION E

The following questions will assist me to find out about the level of competitiveness in your business.

Statement		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
32.	The use of ICT technology increases my customer base					
33.	Having access to ICT technology will allow me to save on operating cost of my business					
34.	Having access to ICT will assist me to use social media for my business					
35.	Having ICT access positions my business better with my customers					
36.	Having ICT provides my business with a competitive advantage from my competitors					
37.	My business is better positioned in making future decisions by having access to ICT technology					
Thank you for providing your input and time in taking part in this research study. Your input that you have provided will be confidential at all times.						

APPENDIX C

Research study control sheet

(To be completed by the research assistant)

Questions:	Answer
1. Did the respondents understand the language the survey was conducted in?	
2. How long did the respondents take to complete the survey (in minutes)?	
3. Did you have to provide/assistance/guidance to the respondents on certain questions? If yes, which questions (indicate question numbers?)	
4. Did the respondents provide any feedback on the survey once it was completed by them?	
5. Did you have any suggestions on how the survey could be improved, based on your observations? Provide your recommendations?	

APPENDIX D

Consistency matrix

The influence of ICT interventions on the performance of informal traders in the Sandton region					
Sub-problem	**Literature Review**	**Hypotheses**	**Source of data**	**Type of data**	**Analysis**
Sub-Problem 1 Measure the influence of ICT interventions within informal traders in the Sandton region.	Opiyo & K'Akumu (2006)	The influence of ICT interventions can be positively related to an informal traders business performance	This data will be sourced from informal businesses operating in the Sandton region utilising actual interviews and research survey questionnaire questions that will provide the data. Questionnaire/ Face to Face survey	Descriptive statistics	The characteristics include the type of informal business, types of ICT currently being utilised and age and gender will be used for analysis (Mean and Standard Deviation)
	Boateng (2011)	The influence of ICT interventions can be positively related to an informal traders performance and competitive advantage	Data will be sourced from the informal traders operating in the Sandton region.	Descriptive statistics	The characteristics include the type of smartphone applications such as banking apps and retail applications, such as internet and cell phone banking will be used for analysis

The influence of ICT interventions on the performance of informal traders in the Sandton region					
Sub-problem	**Literature Review**	**Hypotheses**	**Source of data**	**Type of data**	**Analysis**
Sub-problem 2 Evaluate the perceived impact of ICT interventions on performance within the informal traders in the Sandton region.	Donner & Escobari, (2010)	Informal traders adoption of ICT can be positively related to the increase of revenue, productivity and reduced operational cost	Research Questionnaire/ Face to face interviews	Descriptive statistics	Descriptive statistics, frequencies, histograms, Spearman's Correlation, Mean and standard deviation.
		Informal traders ICT application can be positively associated with improved visibility and product/service information, to attract and retain customers	Data will be sourced from the informal traders operating in the Sandton region.	Descriptive statistics	The characteristics include the ICT barriers for business performance