Thesis
By
Yvette A. A.
Ussher

The Faculty of Arts and Social Sciences
Stellenbosch University

The Economic and Social Effects of Mobile Phone Usage: The Case of Women Traders in Accra

October 2015

The Economic and Social Effects of Mobile Phone Usage: The Case of Women Traders in Accra

Yvette A. A. Ussher

Dissertation presented for the degree of Doctor of Philosophy (Sociology) in the
Faculty of Arts and Social Sciences
Stellenbosch University

Supervisor: Dr Lloyd B. Hill

October 2015

DECLARATION

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the authorship owner thereof (unless to the extent explicitly otherwise stated) and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

Date: October 2015

ACKNOWLEDGEMENTS

First and foremost, I give thanks to my heavenly Father for his mercies, guidance, grace, and sustenance throughout all these years pursuing this degree. All praise to God for bringing me this far in my academic pursuit.

This thesis would not have seen the light of day without the help of my supervisor, Dr Lloyd Bennett Hill who introduced me to this new exciting field of study that has broadened my horizons in the field of the sociology of work, communications and ICTs. I am particularly grateful for his scholarly and professional insights, guidance, support, time and continuous inspiration and motivation given throughout these years that helped me to develop a better understanding of the issues involved in this thesis. My deepest thanks and intellectual respect go to him.

A special word of thanks goes to my dearest husband who showed his love, care, support and patience as I was away from the "life we were sharing together" in pursuing this degree. My heartfelt love and appreciation go to you for your unbelievable understanding and sacrifice. Thanks also very much for working on all my images.

I could not have completed this work without my mother accepting to take care of my baby, Jacinda. My dearest Mum, thanks very much for showing me a true motherly love and being there for me while away pursing this degree. Daddy, I also say thank you for your patience and understanding as your wife (my mother) was taken away from you to be a mother to my baby. Also, thanks go to my twin sister and all family members who in diverse ways supported my mum in taking care of my baby while I was away from home in pursuance of my degree.

A special note of thanks goes to the President of the Greater Accra Market Association, all queen mothers and the market women of the four markets where I conducted my field work, for all their assistance and contributions to getting this work completed. Thank you for sharing your time and giving me insights into your business activities, which enabled me to understand the issues I explored in this thesis.

The Economic and Social Effects of Mobile Phone Usage: The Case of Women Traders in Accra

Yvette A. A. Ussher

Dissertation presented for the degree of Doctor of Philosophy (Sociology) in the
Faculty of Arts and Social Sciences
Stellenbosch University

Supervisor: Dr Lloyd B. Hill

October 2015

DECLARATION

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the authorship owner thereof (unless to the extent explicitly otherwise stated) and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

Date: October 2015

ACKNOWLEDGEMENTS

First and foremost, I give thanks to my heavenly Father for his mercies, guidance, grace, and sustenance throughout all these years pursuing this degree. All praise to God for bringing me this far in my academic pursuit.

This thesis would not have seen the light of day without the help of my supervisor, Dr Lloyd Bennett Hill who introduced me to this new exciting field of study that has broadened my horizons in the field of the sociology of work, communications and ICTs. I am particularly grateful for his scholarly and professional insights, guidance, support, time and continuous inspiration and motivation given throughout these years that helped me to develop a better understanding of the issues involved in this thesis. My deepest thanks and intellectual respect go to him.

A special word of thanks goes to my dearest husband who showed his love, care, support and patience as I was away from the "life we were sharing together" in pursuing this degree. My heartfelt love and appreciation go to you for your unbelievable understanding and sacrifice. Thanks also very much for working on all my images.

I could not have completed this work without my mother accepting to take care of my baby, Jacinda. My dearest Mum, thanks very much for showing me a true motherly love and being there for me while away pursing this degree. Daddy, I also say thank you for your patience and understanding as your wife (my mother) was taken away from you to be a mother to my baby. Also, thanks go to my twin sister and all family members who in diverse ways supported my mum in taking care of my baby while I was away from home in pursuance of my degree.

A special note of thanks goes to the President of the Greater Accra Market Association, all queen mothers and the market women of the four markets where I conducted my field work, for all their assistance and contributions to getting this work completed. Thank you for sharing your time and giving me insights into your business activities, which enabled me to understand the issues I explored in this thesis.

To the University of Stellenbosch's Department of Sociology and Social Anthropology, I say thanks for all the support provided and the assistance to attend the SASA conferences that gave me much insight into the developing issues of this thesis. To Mr Xaba, thanks for your insightful discussions that gave me a broader understanding about the field of the sociology of work. Thanks also go to Prof Simon Bekker and Prof Kojo Sena for their support and encouragement rendered while pursuing this work.

I would also like to acknowledge the funding that was awarded to me by the Graduate School of Arts and Social Sciences to pursue my doctoral studies full-time at Stellenbosch University. I would also like to extend my deepest thanks and appreciation to CODESRIA for their generous fellowship awarded me to conduct my fieldwork and to write this thesis.

I would not have earned this degree without the communication from Dr Dan-Bright S. Dzorgbo about the Stellenbosch University Graduate School of Arts and Social Sciences fellowship and his encouragement to me to apply for this fellowship. Dr Dan-Bright S. Dzorgbo I appreciate this kind gesture rendered to me. Thank you very much.

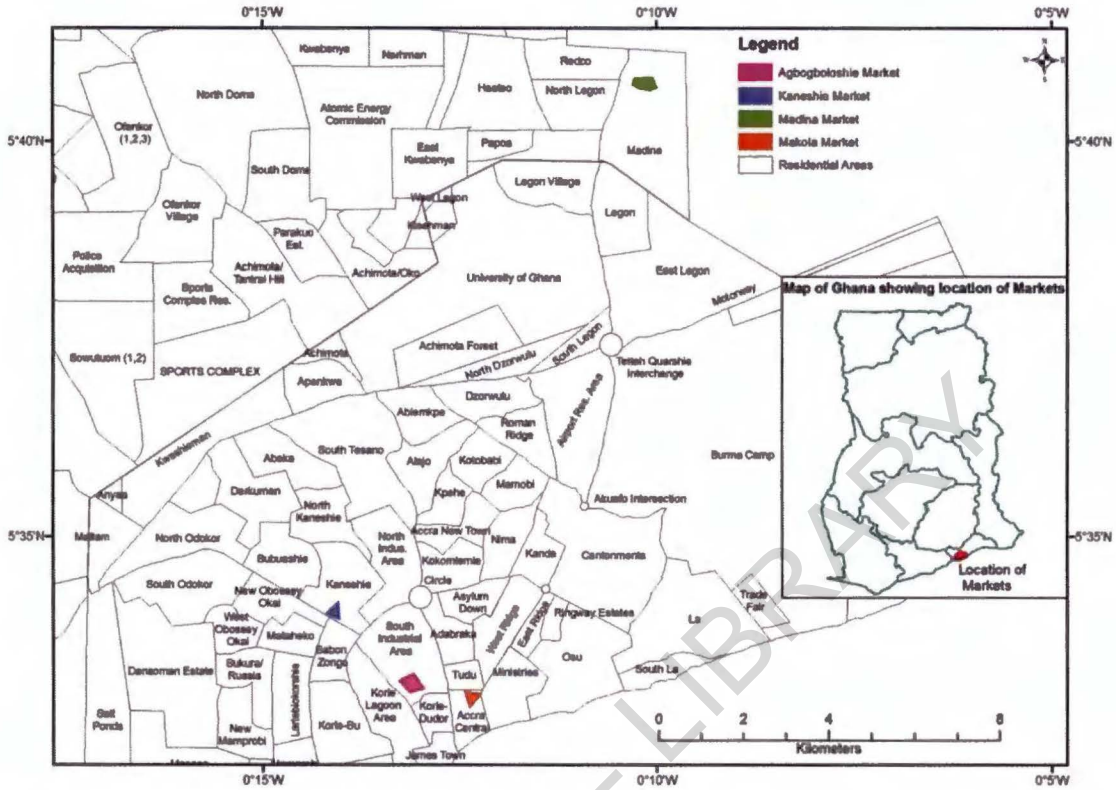
Lastly, thanks go to all friends and loved ones who in diverse way contributed to make this thesis a success.

DEDICATION

This work is dedicated to my dearest husband and lovely daughter.

TABLE OF CONTENTS

Map showing the four study sites (markets) in Accra



Source: Department of Geography and Resource Development of the College of Humanities, University of Ghana, Legon. Accra, Ghana.

A textile and a vegetable trader in the market with their mobile phones

List of Tables

List of Figures

List of Acronyms and Abbreviations

ACE:	African Coast to Europe fibre optics
ADP:	Accelerated Development Programme
AFRC:	Armed Forces Revolution Council
AMA:	Accra Metropolitan Assembly
AMPS:	Advanced Mobile phone System
AMTA/ARC:	Australian Mobile Telecommunication Association/Australian Research Council
CDMA:	Code Division Multiple Access
DAs:	District Assemblies
EDGE:	Enhanced Data rates for GSM evolution
GDP:	Gross Domestic Product
GLSS 6:	Ghana Living Standard Survey 6
GNP:	Gross National Product
GPRS:	General Packet Radio Service
GSM:	Global System for Mobile Communication (Groupe Spécial Mobile)
GTUC:	Ghana Trade Union Congress
ICTs:	Information and Communication Technologies
ICT4D:	Information and Communication Technology for Development
ICLS:	International Conference of Labour Statisticians
ILO:	International Labour Organisation/office
IMT-2000:	International Mobile Telecommunication-2000
ISA:	International Sociological Association
ISSER:	Institute of Statistical, Social and Economic Research,
ITU:	International Telecommunication Union
JHS/JSS:	Junior High School/ Junior Secondary School
LBS:	Location Based Services
LCD:	Liquid Crystal Display
LTE:	Long Term Evolution
MMS:	Multimedia Messaging Service
MSEs:	Micro and Small Enterprises
MTN:	Mobile Telephone Network

NBSSI:	National Board for Small Scale Industries
NCA:	National Communication Authority
PDC:	Personal Digital Communication
PHC:	Population and Housing Census
PNDC:	Provisional National Defence Council
REC:	Research Ethics Committee
RIA:	Research ICT Africa
SAP:	Structural Adjustment Programme/Policy
SAT- 3:	South Atlantic Terminal 3 Submarine Cable
SIM:	Subscriber Identity Module/Subscriber Identification Module
SHS/SSS:	Senior High School/Senior Secondary School
SMS:	Short Messaging Service
TDMA:	Time Division Multiple Access
UMTS:	Universal Mobile Telecommunications Systems
WACS:	West African Cable System
2010 PHC:	2010 Population and Housing Census
1G:	First Generation
2G:	Second Generation
2.5G:	Second and Half Generation
3G:	Third Generation
4G:	Fourth Generation

ABSTRACT

Research on the impact of mobile phones – and associated information and communication technologies (ICTs) – on micro and small enterprises (MSEs) is on the ascendancy in the contemporary "ICT for Development" (ICT4D) scholarship milieu. There have however been relatively few studies focusing on both access and the quality of mobile phone use in the informal MSE sector. This is particularly conspicuous in the case of Ghana, where there is not much research on the impact of mobile phones on the businesses and lives of informal micro-traders. This thesis explores the manner in which women micro-traders have integrated mobile phones into their businesses and how this has affected their lives. The research takes the form of a multi-sited case study and uses semi-structured interviews and participant observation to explore patterns of mobile phone use among women in four markets in Accra – Makola, Agbogbloshie, Kaneshie and Madina. The study focuses specifically on micro-traders working in the wholesale and retail markets for vegetables and textiles. Two broad conclusions follow from this research. Firstly, at the level of individual experiences, the women traders recount how mobile phones have become indispensable to their trading activities. The study finds that mobile phones improved the working routine of the women in a number of ways: by improving the exchange of market information (via calls and to some extent texting); by enhancing the coordination of micro-trading activities; by strengthening relationships and trust within trading networks; and by helping to reduce transactional and transportation costs. The effects of mobile phones on these women's micro-trading activities have extended positively into their social lives. As profit margins have increased and costs have been reduced, the resulting improvement with respect to incomes has enabled these women to attain an improved 'self-image' and a new level of socio-economic status within the informal economy of Accra. Secondly, notwithstanding the benefits reported by the women micro-traders, the study also suggests wider patterns associated with digital inequality. The women had limited technological knowledge of their mobile phones, and made limited use of more advanced mobile services, such as mobile money transfer and mobile banking. These patterns are explained in terms of inequality with respect to various forms of literacy: basic language literacy; technical literacy; and information literacy. Key dimensions of inequality include age/intergenerational differences and educational differences. While the study explores these patterns of inequality with respect to mobile phone use, it concludes by arguing that the integration of mobile phones into micro-trading has introduced some formality into the domain of informal micro-trading in Accra.

OPSOMMING

Navorsing oor die invloed van drafone – en verwante inligting- en kommunikasietegnologieë (IKT's) – op mikro- en kleinskaalondernemings (MKO's) is aan die toeneem in die hedendaagse "IKT vir Ontwikkeling"- (ICT4D-) studieomgewing. Daar bestaan nietemin betreklik min studies wat op sowel toegang tot en gehalte van drafoongebruik in die informele MKO-sektor fokus. Dit is veral opvallend in die geval van Ghana waar min navorsing bestaan oor die invloed van drafone op sakeondernemings en op die lewens van informele mikro-handelaars.

Hierdie tesis ondersoek die wyse waarop vroulike mikro-handelaars drafone in hul ondernemings geïntegreer het en hoe dit hul lewens beïnvloed het. Die navorsing neem die vorm aan van 'n multi-omgewing-gevallestudie en gebruik semi-gestruktureerde onderhoude en deelnemerwaarneming om patrone van drafoongebruik onder vroue in vier marksektore in Accra – Makola, Agbogbloshie, Kaneshie en Madina – te verken. Die studie fokus in die besonder op mikro-handelaars wat in die groothandel- en kleinhandelmarkte vir groente en tekstielware werksaam is.

Die navorsing kom tot twee breë gevolgtrekkings. Eerstens, op die vlak van individuele ervarings, het die vroulike handelaars vertel hoe onmisbaar drafone vir hul handelsaktiwiteite geraak het. Die studie bevind dat drafone die werkroetine van die vroue op verskeie maniere verbeter het: deur die uitruil van markinligting te verbeter (via oproepe en in 'n sekere mate teksboodskappe); deur die koördinasie van mikro-handelsaktiwiteite te verfyn; deur verhoudings en vertroue binne handelsnetwerke te versterk; en deur te help om transaksie- en vervoerkoste te verlaag.

Die invloed van drafone op hierdie vroue se mikro-handelsaktiwiteite het ook positief bygedra tot hul sosiale lewens. Soos winsgrense verhoog en koste verlaag het, het die gevolglike styging in inkomste hierdie vroue in staat gestel om 'n beter "selfbeeld" en 'n nuwe vlak van sosio-ekonomiese status binne die informele ekonomie van Accra te verkry.

Ondanks die voordele wat deur die vroulike mikro-handelaars gerapporteer is, het die studie tweedens gedui op omvattender patrone wat met digitale ongelykheid geassosieer word. Die vroue het beperkte tegnologiese kennis van hul drafone en het beperkte gebruik gemaak van meer gevorderde drafoondienste, soos geldoordrag en banksake deur middel van drafone. Hierdie patrone word verklaar in terme van ongelykheid met betrekking tot verskeie vorme

van geletterdheid: basiese taalgeletterdheid, tegniese geletterdheid en inligtingsgeletterdheid. Sleuteldimensies van ongelykheid sluit ouderdom-/intergenerasie-verskille en opvoedingsverskille in. Alhoewel die studie hierdie patrone van ongelykheid met betrekking tot drafoongebruik verken, betoog dit ten slotte dat die integrasie van drafone in mikro-handel 'n mate van formaliteit in die domein van informele mikro-handel in Accra tot stand gebring het.

CHAPTER ONE

INTRODUCTION AND OVERVIEW OF THE RESEARCH CONTEXT

1.1 Introduction

'They have gone from being large devices that were basically intended to be mounted in cars...to sleek small devices we now carry in our pockets or our purse' (Ling & Donner, 2009 : 41). The Americans refer to it as a "cell", the Germans use the term "handy" which it certainly is, the Japanese use "keitai" which simply means phone. In China, it is referred to as "shoji" or hand machine, in Arabic it is sometimes called "makhmul" (referring to the act of carrying) and it is charmingly called "telefonino" in Italy (Plant, 2000:23; Strivastava, 2004: 4).

Since Dr Martin Cooper[1] incorporated telephones into a portable mobile handsets[2] to be used outside of police cars and marketed to the general public in 1984[3], mobile phones have become one of the most important Information and Communication Technologies (ICTs) worldwide. Mobile phone subscriptions continue to increase as noted in the Statista Report (2015) that there will be over 7 billion mobile phone subscribers in the world by the end of 2015. Globally there were almost 7 billion mobile phone subscribers in the world at the end of 2014 and ninety per cent of this subscription penetration was estimated to be in developing countries, where the share of mobile phone subscriptions accounted for more than three quarters (78%) of the world's total (International Telecommunication Union (ITU), 2014). Townsend (2000) points out that mobile phones have been rapidly accepted throughout the world, and particularly in countries with far lower levels of internet use. According to the International Telecommunication Union (2014) globally, there are 4 billion people not yet using the Internet and more than 90 per cent of them are in the developing world. Internet user penetration has reached 40 per cent globally, with seventy-eight per cent in developed countries and thirty-two per cent in developing countries. The International Telecommunication Union opined that only 20 per cent of Africans is using the internet at the end of 2014 (ITU, 2014). Overå (2006) reports that mobile phones have increased much more rapidly than fixed lines and are used much more than the internet. Molony (2006) adds that in most developing countries, mobile phones have become widespread and accessible even in the low income areas. People own mobile handsets and can subscribe privately to

[1] A former general manager for the systems divisions at Motorola in 1970s.
[2] In April 1973.
[3] Nawaz, 2002; Agar, 2004.

receive services from mobile phone providers. For Etzo and Collender (2010:659), 'mobile phones are almost always the cheapest and quickest way to communicate particularly [in areas where] when fixed lines and broadband internet are underdeveloped and dependent upon expensive infrastructure'.

Since being marketed to the general public, mobile phones have been adopted at a staggering rate and studies show that mobile phones are adopted based on different motives. Previous research suggests that the primary motive is instrumental, for example getting re-assuring information about the well- being of loved ones, or the chance to call for help in emergency cases such as street accidents (Ling & Yttri, 1999; Palen et al., 2000; Geser, 2004). Strivastava (2004) and Ling (2004) argue that the primary motive for the adoption of mobile phones is for safety and security reasons. Palen et al. (2000) conducted a study among nineteen new mobile phone users, which shows that mobile phones were adopted for business or job related purposes and for safety and security reasons. Among adults, men were found to adopt mobile phones for job-related or business purposes whereas women tend to adopt mobile phones for security and safety reasons (Townsend, 2000; Palen et al., 2000; Katz & Aakhus, 2002; Lemish & Cohen, 2005; Gergen, 2005; Castells et al; 2007) or concern or need to sustain roving ties with families and friends (Townsend, 2000). Women primarily use their mobile phones to maintain intimate or personal relationships or what is referred to as social connectivity (Gergen, 2005; Lemish & Cohen, 2005; Huyer et al, 2006; Castells et al; 2007; Wajcman et al; 2007). For social connectivity purposes it is argued that women use their mobile phones to check on their children (Ling & Haddon, 2001). Townsend thus argues that for men mobile phones are tools of fashion, power and virility and for women they are security blankets particularly in the city where there is uncertainty (Townsend, 2000). In a national survey of 1000 mobile phone users in the United States, Fox (2001) found that "women use their mobile phones as 'symbolic bodyguards' when feeling vulnerable in public places – in much the way that they used to use a newspaper of magazine as a 'barrier signal'."

Once a technology that was restricted to urban and predominantly male élites and used for instrumental purposes (Roos, 1993; DiMaggio & Hargittai, 2001; Lacohee et al. 2003; Geser, 2004, Kamaga, 2006) mobile phone has become widespread and is now easily available to the rich and the poor, the literate and the illiterate, and men and women are now all not restricted in their access and use of this new technology. Arguably, one major impact of the mobile phone is its capacity to connect partly illiterate mass population in less developed

countries who would never have had the means to buy a computer and who were not connected to the traditional networks of landline phones (Townsend, 2000). Although mobile phones have become prevalent and accessible to all groups and social classes, Donner (2008:147) notes that 'mobile[s] are, like other technologies, best understood as co-constructed phenomena; there are interrelationships between what the technology is and how people choose to use it'. For this reason, there are differences in mobile phone access and use, and this is what is referred to as digital inequality (DiMaggio & Hargittai, 2001). It is argued that data on mobile phone usage is needed to inform the debate about digital inequality because mobile phone subscription figures mostly refer to those who have access to subscriber identity or identification module (SIM) cards and owners of mobile handsets rather than the specific patterns of use and users (Etzo & Collender, 2010). In light of this, the extent to which users are able to reap the benefits from their use of mobile phones will inform the debate about digital inequality — and the closing of the global divide. In addition the benefits reaped by mobile users will show the role of mobile phone in socio-economic development especially in developing countries.

Melkote & Steeves (2004), Hahn & Kibora (2008), Rashid & Elder (2009) and Litondo (2012) argue that mobile phones have become the predominant mode of communication in developing countries and are contributing to development in particular in Africa. Mehta et al. (2011) affirm that they connect individuals to other individuals, to information, to markets and to services while transcending the male- female, urban-rural and rich and poor divide. Therefore they have gone beyond being a rare expensive item used by the male business elite to a pervasive low cost personal item that has become the world's leading telecommunication technology – with a profound impact on the social connectedness of users. Hahn and Kibora (2008) point out that in developed countries mobile phones are often perceived as more of a basic necessity but in least developed countries like Africa they can provide previously unavailable opportunities for communication over long distances.

1.2 Background to the study

The rapid growth of mobile phones in developing countries/Africa has not excluded Ghana. Ghana is among the countries that has witnessed a significant increase in mobile telephone subscriptions in the last two decades. Between 1993 and 2012, mobile subscription rose from 1742 to over 24 million (Dogbevi, 2012; Dowuona, 2013). Mobile subscriptions in Ghana

continue to rise, from a level of over 24 million in the year 2013, to 30 million as at December 2014 and the number is expected to increase over the years. It is also revealed that as at December 2014, the rate of mobile phone penetration in Ghana has exceeded 100 per cent (113%) (National Communication Authority, (NCA), 2014**f**).

In Ghana mobile phones have been cited as the fastest growing ICT sub-sector with six mobile network providers – MTN, Tigo, Vodafone, Airtel, Glo and Expresso. They have therefore become pervasive in Ghana. In Ghana, particularly in the urban areas, for instance on the streets of Accra, it is fairly easy to bump into somebody fidgeting with or communicating with someone on his mobile phone. At any social, political and even religious gathering one can often see someone busy with his or her mobile phone. Market traders, and especially women, tend to hang them on their necks (in mobile phone cases or covers), as a kind of jewellery accessory, reflecting what Haddon (2000) calls 'technological jewellery'.

The rapid spread of mobile phones in Ghana has been attributed to many factors which include liberalisation of the telecommunication sector, the influx of cheaper mobile handsets into the country, prepaid subscription and the usage of local language in (voice) communication. This has allowed Ghanaians to stay in touch with family, friends and business partners. In Ghana, mobile phones have therefore become an integral ingredient in personal communication and economic life. The influx of cheaper mobile handsets, the ease of SIM card subscriptions and dramatic changes in the cost of services have resulted in the current competition for more customers among mobile phone service providers. In Ghana mobile phones have therefore entered every sector of the economy and are not restricted to any particular actors in any sector. They appear to be an essential feature of the routines of economic activities particularly among owners of sole proprietor businesses which form part of micro and small enterprises (MSEs).

In contemporary times, MSEs constitute 90% of enterprises in most developing nations (Donner & Escobari, 2009; Tetteh & Frempong, 2009; Litondo, 2012) and they offer income-generation and employment opportunities in many developing countries, serving as a fundamental component in poverty alleviation (Mead & Liedholm, 1998; Duncombe et al. 2006; Molony, 2006; Esselaar et al; 2007; Jagun et al. 2008). Most MSEs form part of the informal economy and they are characterised by very small scale operations; use of low technology; low start up and working capital; low business skills and income among others. Generally, MSEs are described as very small businesses employing less than 10 workers,

even though on average most MSEs employ only one person (Dejene, 2007; Donner & Escobari, 2009). For instance, a study in four villages in Java, Indonesia by Singh et al. (2000) on 200 micro and small enterprises reveals that the majority (94%) of respondents are sole proprietors within the informal economy. Mead & Liedholm (1998) and Donner & Escobari (2009) also note that most MSEs in developing countries consist of sole proprietorships (one person working alone) that yield low profits and struggle to survive. This is evident in Ghana as sole proprietorship is the most common form of MSE and contributes significantly to employment, poverty reduction and wealth creation. MSEs constitute about 70% of enterprises in Ghana and it is estimated that about 40% of the country's gross national income derives from these enterprises to informal economy activities (Arthur, 2007; Tetteh & Frempong, 2009). The recognition of the role of MSEs in Ghana's socio-economic development led to the creation of The National Board for Small Scale Industries (NBSSI)[4] (Arthur, 2007). The Government of Ghana therefore has a policy that promotes the growth of MSEs to aid wealth creation and reduce poverty levels[5] in the country, in this way assisting the country to realise one of the Millennium Development Goals (Frempong, 2009).

Sole proprietorship serves as a job avenue for many people in Ghana's informal economy and in particular women. Seventy-five per cent of households in Ghana depend on women's small and micro income-generating activities in the form of sole proprietorships to earn their living. Sole proprietorship for most women in Ghana lies mainly in non-farming enterprises (Boohene et al, 2008) with women operating 72% of these enterprises. Almost half of these sole-proprietor enterprises (49%) involve trading, with about 41% of female traders operating in urban centres (Ghana Statistical Service, 2008). Trading as a female activity has a long history in West Africa going as far back as the Trans-Saharan trade (Robertson, 1984). Robertson (1984) notes that women predominate in the distributive system: they both collect and convey most of the food and other necessities for the household, selling most in open air market. In Ghana, women form the majority of the market trading landscape (Grieco et al. 1995; King, 2001; Darkwah, 2007). King for instance observed that market trade in Ghana is considered a female activity and is often pre-dominated by women (King, 2001). Some of these women traders, who are located at the apex of the market trading hierarchy[6] in Ghana,

[4] In 1985 by the Provisional National Defence Council (PNDC).

[5] This pertains particularly to rural areas where the majority are poor.

[6] The trading hierarchy consists of categories of micro-traders in Accra based on scale of activity: wholesaler, (wholesale retailer) retailer, petty trader and (street) hawkers. More details of these categories of traders will be given in Chapter 4.

are described as businesswomen of high social standing[7] (Darkwah, 2007) and represent an extension of the female trader[8] that is such a feature of West Africa. Since they got involved in micro-trade, they have extended their trading activities beyond the boundaries of Ghana (for instance Accra-Lome; Accra-Burkina Faso; and Accra-Lagos) and this is noted in the writings of Clark (1994) that Ghanaian women micro-traders engage in trade to places hitherto unknown in the trade distribution chain.

Kvasny (2002) argues that social inclusion and opportunities for material prosperity are created with new technologies. It is also argued that mobile phones have become the dominant form of communication technology among sole proprietor enterprises (Samuel et al; 2005; Frempong & Essegbey, 2006; Frempong, 2009; Litondo, 2012) and Overå (2006) points out that micro-traders need information from different places than where they are situated at a particular moment in time and telecommunication technology provides new tools that can make exchange of information and networking among traders more efficient, especially when they are spatially dispersed. Donner and Escobari (2009) argue that mobile phones allow people to communicate at a distance and exchange information instantaneously. Ghanaian women traders have not been left out of the digital revolution: they have integrated mobile phones into their business activities and lives. Studies in developing countries have revealed the innovative application of mobile phones in sole proprietor trading and their impact to economic development. It is noted that mobile phones offer access to information particularly about prices (Bertolini, 2001; Eggleston et al; 2002; Donner, 2004), increase productivity – through time saving or reduction of travel expenses (Katz, 1999; Duncombe & Heeks, 2001), coordination with others and help to maintain constant connectivity with friends, family and business contacts (Katz & Aakhus, 2002; Rheingold, 2002). They enable business partners to communicate frequently, quickly and directly – without intermediaries – and to check information. Therefore verifying and controlling information becomes easier and information asymmetries are reduced leading to better decision making (Overå, 2006; Jagun et al; 2008). According to Etzo & Collender (2010) mobile phones enable instant communication and may thereby provide an opportunity to address 'informational

[7] These are urban women traders who often travel outside the country, Ghana to engage in trade. They are predominantly wholesale and retail traders of perishable goods such as vegetables and non-perishable goods such as textiles, shoes etc. these category of traders are of higher social standing compared to their other trading colleagues in the trading hierarchy in Accra.

[8] Their involvement in transnational trade extends their activity as a female trader beyond the borders of Ghana.

challenges', such as 'absence, uncertainty, asymmetry', which undermine the efficiency of markets.

Beneria and Sen (1981) argue that Boserup's (1970) seminal work gave attention to women's role in economic development. Micro-trade (where women predominate) plays an important role in Ghana's socio-economic development which makes it crucial to assess the performances of female businesses and how these performances have affected their lives through the adoption of mobile phones.

1.3 Problem statement and focus

As mentioned, in Ghana, sole proprietorships – mainly in the form of informal micro-trade – are pre-dominated by women. Overå (2006) argues that these women tend to be semi-literate or illiterate, for which reason oral communication appears to be the most important mode of information exchange for business. McMillian (2002) points out that information is a vital component of trade. Ghana's market trade, however, is affected by communication challenges, poor road networks, unreliable transport associated with high cost and unreliable middlemen. These are some of the challenges that Ghanaian women micro-traders face in gathering information to operate their businesses. As also noted mobile phones have become prevalent and reached actors of the informal economy, including women in micro trading activities. The integration of mobile phones into micro trading activities has led to a number of emerging studies (Essegbey & Frempong, 2006; Overa, 2006; Frempong et al., 2007; Frempong, 2009; Boateng, 2010) on the role of the mobile phone and its effect on micro trade and economic development in Ghana. However, not many of these impact studies on mobile phones have focused on the role or effect of mobile phones on informal micro-trade, or the "informal economy" or on how informal women micro-traders claimed to be illiterate or semi-literate acquire technological know-how to use their mobile phones for their businesses; how do these women use mobile phones to gather information to operate their businesses? How does the use of mobile phone among these women differ? And how has the use of mobile phones affected their businesses and to what extent have these effects extended into their lives. This study fills this gap through a case study of sole-proprietor enterprises, with particular reference to market women traders in Accra. This research therefore explores these questions (which are developed more fully in chapter four) by focusing on the lives and

informal market based sole-proprietor businesses of wholesale and retail women micro-traders in Accra to assess digital inequalities and the effects of mobile phones on the performance of their businesses.

Miller & Horst (cited in Donner, 2008:151) argue that "people's lives cannot be compartmentalised into separate categories such as economic, social, religious and cultural... they are all part of the same person's experience and concerns." For this reason, the study goes further too and also explores the effect of the use of mobile phones on the performances of businesses in the social lives of informal women micro-traders of Accra.

1.4 Goals and theoretical points of departure

The goal of this study is to generate empirical knowledge and a theoretically informed account of the use of mobile phones among women informal micro- traders and how this relates to digital inequality and the effect of information and communication technologies (ICTs) on their lives and businesses in Accra. This is a marked departure from recent studies in the field, which have tended to subordinate the impact of mobile phones to other concerns[9]. Mobile phones have become the most widespread manifestation of ICTs and have been adopted by all categories of people; however, differences in their access and use – digital inequality – exist. The study focus therefore falls on assessing digital inequality in terms of mobile phones and on how mobile phones have shaped both the lives of informal women micro-traders and their sole proprietorship businesses. In this context, two studies have been particularly useful in the shaping of this study: Boateng (2010, 2011) suggested model of the effect of mobile phones on micro-trading and DiMaggio and Hargittai (2001) on the dimensions of digital-inequality. The latter include: technical means or variation, the autonomy of use, skills, social support and the purpose of the use of mobile phones. The study focus falls on the use of mobile phones among wholesale and retail women traders in Accra and assesses the differences between their access to and use of mobile phone-based information technologies. In so doing I assess the patterns of digital inequality among woman in market-based sole proprietorships.

Many studies on digital inequality – such as those by DiMaggio and Hargittai (2001), Van Dijk and Hacker (2003), Warschauer (2003) and Stiakakis et al. (2010) – have focused on

[9] For instance on marriage relationships, education and learning, health, agricultural developments, etc;

internet penetration and access by means of the use of computers as a way to measure the divide. This study takes a new dimension of assessing digital inequality and focuses specifically on mobile phones. It focuses on the five patterns of digital inequality identified by DiMaggio and Hargittai (2001) and explores the differences in access to and in the use of mobile phones among informal women micro-traders in Accra. ITU (2011) explains that access is the availability of ICT infrastructure (mobile phone handsets and types of networks) and ownership, whereas level of use and the capability to use technology effectively is defined as usage intensity. They further argue that the level of use and usage intensity is dependent on the user's skills. This suggests that the extent of the use of mobile phones and the effect of this on users depend on the types of mobile phone device and network that are used, on the skill and expertise that are used to operate the technology, and on the freedom to develop the purposes of mobile phone services in the social and economic lives of the user. The study therefore explores questions such as how women traders acquire the technological knowledge to use their mobile phones and the features and services that they use in their businesses, what their extent of control is in their use of mobile phones in their businesses and what the levels and effects are of their use of mobile phones in their businesses.

Boateng (2010, 2011) argues that the personalisation, ubiquity, localisation, immediacy and instant connectivity attributes of mobile phones have the potential to generate operational, relational and strategic benefits that result in incremental, transformational and production effects on micro-trading activities. Therefore to Boateng (2010, 2011) the benefits of mobile phones in micro trading are broadly of three categories: incremental (improving the speed and efficiency of what people already do), transformational (offering something new), and related to production (selling mobiles and related services. By drawing or assessing on Boateng's concepts of 'incremental' and 'transformational', this study investigates how women micro traders in Accra assess the role of mobile phones in their businesses.

The study would also assess the spill over effects of mobile phone use in businesses in the social lives of women traders. This therefore makes this research important as it assesses the role of mobile phones on performances of businesses on informal work and employment as well as the lives of informal women micro traders in Accra.

1.5 Chapter outline

Chapter 2: *'The Informal Economy, Women and Micro-Trade in Ghana'*. This chapter discusses the use and relevance of the term 'informal economy' by reviewing literature on the genesis of the term 'informal economy' and examines the diverse conceptualisation and approaches of the term. I also focus on highlighting the interconnections and linkages between the formal and informal economy as the study location, nature of work and participants in this study is conceptualise within the structuralist view of informal economy. I then narrow the discussion by focusing on the Ghanaian economy and examining its informal employment economy. I conclude the chapter by examining the role of women in Ghana's economy and in informal micro-trade in particular.

Chapter 3: 'The *Social Significance of Mobile Phones in Africa and Ghana'*. This chapter reviews the literature on the global distribution of mobile phones, focusing on the reasons accounting for the rapid growth rate of mobile phones in Africa. The Ghana telecommunication sector is also discussed, with a particular emphasis on the mobile phone industry. In this chapter I also discuss the effects of mobile phones on trade among sole proprietor micro and small enterprises (MSEs). I assess Boateng's suggested model of the effect of mobile phones on micro-trading activities. The chapter also discusses the functions of mobile phones beyond the communication function and examines the concept of "digital inequality", drawing on DiMaggio and Hargittai's suggested dimensions of digital inequality.

Chapter 4: '*Research Design and Methods'*. This chapter discusses how I situated the study within the social constructionism and constructivist paradigm and constructed my field, selected respondents and engaged in a multi sited case study. It also discusses the data gathering methods of the study. In this chapter I discuss the context of the research; the wider context of Accra – the capital city of Ghana – and the four major markets selected for the study: Makola, Agbogbloshie, Kaneshie and Madina markets. I present in this chapter the processes used to gather the data from these markets through semi structured interviews, key-informant interviews and observation. In this chapter I also discuss some of the difficult and enthralling moments experienced during my fieldwork. The chapter also focuses on how data from the field was analysed using thematic content analysis to reveal themes from interviews and observations made among informal women micro-traders in the markets selected. I

conclude this chapter by spelling out the research ethics I adhered to and how I gained approval to undertake this research.

Chapter 5: *'Women Micro- Traders in Accra:' Knowledge, Digital literacy and Patterns of Mobile Phone use'*. This chapter discusses the discourse of women micro traders in the four markets selected, focusing on patterns associated with their access to, knowledge of and use of mobile phones in their trading activities. I begin this chapter with a discussion of the rationale for the acquisition of mobile phones among women micro traders in the selected markets in Accra and examine how they gain technical knowledge to use their mobile phones. The chapter also examines digital inequality, by focusing on the dimensions of digital inequality put forward by Di Maggio and Hargittai (2001) and assesses differences in the quality of the use of mobile phones among women traders.

Chapter 6: '*The Role of Mobile Phones in the Market and Social Lives of Women Traders in Accra'*. This chapter focuses on the discourse of women micro traders in the four markets selected and discusses the effects of mobile phones on the performance of trading activities and the extent to which these effects on businesses have spilled over into the social lives of women traders in Accra. I begin this chapter by assessing how long women micro traders in Accra have owned mobile phones and the rational for integration of mobile phones into their trading activities. I further discuss the effect of mobile phones on the trading activities and social lives of the women traders. I conclude this chapter by discussing information associated with trust in this era of mobile phones.

Chapter 7: *Concluding Discussion*. This chapter summarises the central themes that emerged from the study, and revisits the main question of the study: How do informal women micro-traders acquire technological know-how in using their mobile phones and how do they assess the effect of the use of mobile phone on the performance of their businesses and lives? The chapter discusses issues associated with digital inequality and explores the effects of mobile phones on the micro-trading activities and social lives of women traders in Accra. I end this chapter by drawing a number of conclusions regarding mobile telecommunication in the informal micro-trading domain and the informal economy in Accra.

CHAPTER TWO

THE INFORMAL ECONOMY, WOMEN AND MICRO-TRADE IN GHANA

2.1 Introduction

Since the concept 'informal sector' was introduced by Keith Hart in the early 1970s to describe urban economic activities in Ghana and later changed to 'informal economy' by the International Labour Organization (ILO) (Trager, 1987), it has gained considerable currency in academic circles and employment development policies; however, it is a concept that has generated diverse conceptualisations and the usefulness of the concept 'informal economy' has constantly been debated and still continues more than half a century after the distinction was first introduced.

This chapter attempts to examine the use and relevance of the term 'informal economy' by reviewing literature on the origin of the informal economy; examining the diverse conceptualisations, debates and theoretical approaches to studying the informal economy and highlighting the interconnections between the formal and informal economy. The focus will then fall on the Ghanaian economy and its capital, Accra before examining its informal economy. The chapter will conclude with a discussion on the role of women in Ghana's informal economy by focusing on micro-trade (specifically market trade).

2.2 The theorisation of the informal economy

2.2.1 *A historical exploration of the term 'informal economy' and its heterogeneous meanings*

The term 'informal economy" entered academic and development circles through the International Labour Organisation (ILO) Employment mission to Kenya in 1972 (ILO, 1972) essentially as a result of Hart's (1970, 1973) seminal paper which was presented at a conference on Urban Unemployment in Africa held in Sussex in 1971. His paper was based on the ethnographic work he did on urban migrants in Ghana located in a community in Accra called Nima. Hart (1970, 1973) observed that the majority of the migrant labour force is involved in occupations that did require some form of skill. He also observed that these urban migrants earn low wages and therefore resort to holding down two jobs to supplement their wage income. They therefore resorted to some form of "petty capitalism"; that is, some

employed a small number of workers but were themselves actively involved in the labour process (Smart and Smart 2005: 3).

Based on his observation among these urban migrants of Accra and the activities in which they were involved to supplement their wage income, Hart (1973) argues that income activities were of two forms - formal and informal. To Hart, formal income activities include public and private sector wages and transfer payments such as pensions and unemployment benefits. Informal income opportunities, on the other hand, involve a wide range of activities, and are of two forms legitimate and illegitimate activities. Activities such as: primary and secondary activities (farmers, building contractors, shoemakers); tertiary enterprises with relatively large capital inputs (for example, housing, commodity speculation and renting activities); small-scale distribution (by petty traders, street hawkers and bar attendants among others) that do not fall in the classified group of formal activities are legitimate; and finally, services (such as those of hustlers and swindlers in general) and transfers (such as larceny and gambling) are classified as illegitimate informal income activities (Hart, 1970/1973).

Hart (1970/1973) also argues that informal income-generating activities are a form of self-employment for those who work alone or those in partnership with others. In this context, Hart conceptualised the distinction between formal and informal income activities as "essentially that between wage-earning and self-employment. The key variable is the degree of rationalisation of work - that is to say, whether or not labour is recruited on a permanent and regular basis for fixed rewards" (Hart 1973: 68). This suggests that informal income opportunities hinge on working alone outside the organised labour force to earn income. Hart (1973) also argues that these informal income opportunities not only serve as employment for those not involved in the formal income opportunities, but they also aid in improving the real income of those in formal income opportunities. In other words, informal income opportunities serve as an "employment opportunity sector" for the jobless and all those in the formal economy who wish to increase their incomes.

Following Hart's conceptualisation of the informal economy and its introduction to the academic literature, there has been an explosion in the number of studies on the informal economy which, in turn, has led to diverse and contrasting terminologies and conceptualisations. Some scholars see it as comprising unskilled workers, skilled manual workers, handicraftsmen, and the semi-skilled who operate their own small-scale enterprises (i.e. self- employment) using low-levels of technology for the production of goods and

services and whose activities are not strictly regulated by public authorities and lack social protection (Dasgupta, 1973; Castells & Portes, 1989; Swaminathan, 1991; Amin, 2002). Other scholars argue that the informal economy is about the coping or survival strategies in which the masses are involved to earn their living (Sethuraman, 1976: Gerxhani, 2004). In contrast, other scholars conceptualise the informal economy from the perspective of social network, goods sold and its legality: formality in registration of enterprises, income levels and taxation, (Breman, 1980; De Soto, 1989; Castells & Portes, 1989; Schneider, 2002; Maloney, 2004). It was also conceptualised by the ILO Kenya mission as "a way of doing things" characterised by: ease of entry; reliance on indigenous resources; small-scale operations; skills acquired outside the formal education system and unregulated and competitive markets"; and so on (Peattie, 1987: 854).

For Terrel (1976), the informal economy constitutes self-employed persons with less than 13 years of schooling. While Bromley & Gery (1979) and Leonard (2000) conceptualise the informal economy as ways of making a living outside the formal wage economy, either as an alternative to it, or as a means of supplementing income earned within it. Other scholars (e.g Portes & Castells, 1989; Chu, 1992; Gerber, 1999) conceptualise the informal economy as comprising low income earners who are the marginalised or the poor and are not able to find jobs in the formal economy. According to Chen et al. (2005:38) the 1993 International Conference of Labour Statisticians (ICLS), conceptualised the informal economy "as employment and production that take place in small and or unregistered enterprises". Thus the informal economy, according to the 1993 ICLS, includes all unregistered enterprises below a certain size, including micro-enterprises owned by informal employers who hire one or more employees on a continuing basis and run account operations owned by individuals who may employ contributing family workers and employees on an occasional basis. Chen (2012) points out that – with the incorporation of all work related informal employment or activities that are manifested in industrialized, transition and developing economies and the real world dynamics in labour markets – the concept was broadened by the ILO, the international Expert Group on Informal Sector Statistics (called the Delhi Group), and the global network of Women in Informal Employment: Globalizing and Organizing (WIEGO). It is argued that the broadened term extended the conceptualisation of the informal economy from enterprises that are not legally regulated to include employment relationships that are not legally regulated or socially protected. It also shifted the attention to the considerable diversity of informal workers and economic units, in different sectors of the economy and

across rural and urban contexts that are particularly vulnerable and insecure and experience severe decent work deficits (Chen, 2012; Awojobi et al; 2014).

The broadening of the concept was endorsed by the International Labour Conference (ILC) in 2002 and the International Conference of Labour Statisticians (ICLS) in 2003. The shifting away from the 1993 international statistical definition of the informal sector towards a broader concept that incorporates the whole of informality (ILO, 2002a, 2002b) resulted in the term 'informal economy' being used. According to Hussmanns (2004:2) the ILO used the term 'informal economy' to refer to "all economic activities by workers and economic units that are – in law or in practice – not covered or insufficiently covered by formal arrangements". I concur with the ILO and the ICLS that the term "informal economy" seems more appropriate because the informal economy is not a 'separate sector' of the economy. This is because the use of the term 'sector' implies that the informal sector is a separate entity and not a subsidiary of the economy.

Nevertheless, in the literature, others have coined new terms to replace that of the informal economy, such as, *inter alia*: "survival sector" (Gerxhani, 2004); "the murky sector" (Palmer, 2004); "shadow", "black", "underground", "clandestine" (Leonard, 2000); "underground economy" (Simon & Witte, 1982, Fiege 1989); "black market" (Smithies, 1984); "subterranean economy" (Gutmann, 1977); "protected sector" (Mazumdar, 1976); "un-enumerated sector" (Sethuraman, 1976); "the intermediate sector" (Steele 1972); or "bazaar economy" (Geertz, 1963; 1978).

The diverse conceptualisations and the re-coining of the term shifted Hart's (1973) conceptualisation to many other conceptualisations which made the term adopt diverse meanings in different contexts with different scholars today. Although the foci differ, they also overlap: the only difference is that each group or scholar emphasised the particular conceptualisation of the formal or informal delineation. Peattie, (1987: 851) and Blunch et al. (2001: 6) state that the conceptualisation of the informal economy remains "fuzzy". Nonetheless, many scholars continue to conceptualise the informal economy in different ways and whether such conceptualisations will end up being viewed one day with the same lens is yet unknown. It is upon this premise that Kilby argues that:

> The Heffalump is a rather large and very important animal. He has been hunted by many individuals using various ingenious trapping devices, but no one so far

has succeeded in capturing him. All who claim to have caught sight of him report that he is enormous, but they disagree on his particularities. Not having explored his current habitat with sufficient care, some hunters have used as bait their own favourite dishes and have then tried to persuade people that what they caught was a Heffalump. However, very few are convinced and the hunt goes on (Kilby, 1971: 1).

By virtue of the hunting going on over all these years and the debates about the diverse conceptualisations of the informal economy, it has been noted to have changed the old view (Hart's view) of what constitutes the informal economy in contemporary times. The table below shows the old and new conceptualisation of the informal economy.

Table 2.1 Old and New Views of the informal economy

The old view	*The new view*
The informal sector is the traditional economy that will wither away and die with modern, industrial growth.	The informal economy is 'here to stay' and expand with modern industrial growth.
It is only marginally productive.	It is a major provider of employment, goods and services for lower-income groups. It contributes a significant share of GDP.
It exists separately from the formal economy.	It is linked to the formal economy – it produces for, trades with as well as distributes for, and provides services to the formal economy.
It represents a reserve pool of surplus labour.	Much of the recent rise in informal employment is due to the decline in formal employment or to informalisation of previously formal employment relationships.
It is comprised mostly of street traders and very small-scale producers.	It is made up of a wide range of informal occupations – both 'resilient old form' such as casual day labour in construction and agriculture as well as 'emerging new ones' such as temporary and part-time jobs plus homework for high-tech industries .
Most of those in the informal economy are entrepreneurs who run illegal and unregistered enterprises in order to avoid regulation and taxation.	It is made-up of non-standard wage workers, including entrepreneurs and self-employed persons producing legal goods and services, albeit through irregular or unregulated means. Most entrepreneurs and the self-employed are amenable to, and would welcome, efforts to reduce barriers to registration and related transaction costs and to increase benefits from regulation; Most informal wage workers would welcome more stable jobs and workers' rights.
Work in the informal economy is comprised mostly of survival activities, and thus is not a subject for economic policy.	Informal enterprises include not only survival activities but also stable enterprises and dynamic growing businesses, and informal employment includes not only self-employment but also wage employment. All forms of informal employment are affected by most (if not all) economic policies.

Source: Chen (2007)

2.2.2 The three broad approaches of the informal economy

It is worth noting that the 'hunting of the Heffalump' and the debate around the use of the term 'informal economy' today has led to three broad approaches. The views of writers associated with each approach will be examined and the approach that seems appropriate in conceptualising the informal economy with reference to this study location will be highlighted in the next section.

The first theorisation of the informal economy is by the dualists who conceptualise the informal economy as a separate marginal economy which is not directly linked to the formal economy and that provides income or a safety net for the poor in times of crisis. For the dualists the informal economy exists or persists because economic growth or industrial development has failed to absorb those who work in the informal economy (ILO, 1972; Hart, 1973; Sethuraman, 1976; Tokman, 1978; Chen, 2001; Chen, 2012; Roberts, 2013). According to Kay this view of the dualist suggests that the informal economy is a substitute for formal employment as it tends to be a residual 'sponge' that tends to soak surplus labour from the formal economy, making informal employment to be involuntary. The informal economy is seen as a result of excessive urban population growth relative to economic growth which resulted in many people not having employment opportunities in the formal economy (Kay, 2011).

Dualism is a conceptualisation that simply subscribes to the notion that the informal economy comprises marginal activities that provide income for the poor and therefore has no interconnections or associations with the formal economy. The informal economy is therefore seen as a separate 'sector' of income earning opportunities. This is because their conceptualisation of the informal economy is to a large extent based on the ethnographic work of Hart among urban migrants in Ghana in the 1970s, during the era of economic decline which led to their involvement in informal activities to earn their living. Such a conceptualisation tends to be problematic as informal activities do not only involve the marginalised or urban migrants in contemporary times. Many people in developed countries are involved in the informal economy, but not only because they are "marginalised and not well to do''. As Bromley (1978) argues, one cannot equate "the marginalised and not well to do" with the informal economy because not all workers involved in informal income opportunities activities are "marginalised and not well to do" and not all those who are "marginalised and not well to do" are involved in informal activities. This is because there

are workers in the large enterprises or big capitalist firms whose earnings are very low (i.e. their incomes are not sufficient to cater for their needs) and they also lack job security, whereas other workers in informal activities are earning far higher than those in large enterprises or capitalist firms and do have job stability. People, therefore, do not necessarily get involved in informal activities because they are "marginalised and not well to do" but to simply build up capital for an informal enterprise (Bromley, 1978). In Ghana, for instance, people get involved in informal activities as a result of lacking the credentials and qualifications for recruitment into the formal economy - not because they are "not well to do". This to me suggests that in recent times[10] informality in Ghana cannot be solely attributed to marginalisation and 'not well to do', other factors come to play (this would be discussed later in subsequent sections) which makes the dualist orientation not the best approach in conceptualising the Ghanaian economy.

Chen (2001) also claims that there is an association with working in the informal economy and being 'marginalised and not well to do'. She argues that the average incomes earned in the informal economy are lower than in the formal economy. As a result some scholars (e.g. Sethuraman, 1998) claim that a higher percentage of people working in the informal economy are poor relative to the formal economy. This is because there is no simple relationship between working in the informal economy and being poor or working in the formal economy and escaping poverty. Such comparison of incomes and the claim that informal workers are poor tend to hold when informal workers are classified by employment status and by industry or trade. Chen (2001) thus points out that informal incomes tend to decline as one moves across certain types of employment such as employer to self-employed to informal and casual wage workers to industrial workers. This suggests that there is a hierarchy of workers in the informal economy and a hierarchy of income earned. Therefore the type of employment one is involved in tends to determine the income earned by the informal worker.

Chen adds that there is a gender gap in incomes and wages in the informal economy because world-wide women are under-presented in higher income employment positions in the informal economy (employer and self-employed) and over represented in the lower income positions (casual wage workers and industrial workers) (Chen, 2001). In the case of Ghana, majority of women are self-employed and involved in micro-trade, they fall in the category of

[10]That is after years of Hart's early 1970s study in urban Ghana, a lot of transformation has occurred in Ghana's informal economy owing to many factors (to be discussed later) thus making such past decade conceptualization by Hart debatable.

self-employed suggesting their employment status and income levels being averagely high and ranking at the top of informal economy compared to casual worker or industrial worker. This thus contrasts the argument by some scholars (e.g. Castells & Portes, 1989; Sassen, 1991; Sassen, 1998) that people (particularly women) of the informal economy are marginalised and 'poor'. Again this suggests that the dualist orientation does not best fit the Ghanaian economy in recent times even though Hart's early 1970's study in Ghana did not focus on the gender components and being migrants to assess income rankings.

The second theorisation is by the legalist school of thought, which claims that the informal economy comprises micro-entrepreneurs who deliberately choose to operate informally in order to avoid cost, time and effort of formal registration and who need property rights to convert assets into legally recognised assets. These micro-entrepreneurs tend to work informally to reduce their own costs after weighing the cost and benefits of operating informally relative to formality in order to increase their own wealth as a rational response to over-regulation by government bureaucracies (De Soto, 1990; Maloney, 2004; Chen, 2012; Roberts 2013). This legalist position argues that not all people involved in the informal economy tend to be wage employment workers (through subcontracting or outsourcing). Many choose rather to work voluntarily and be self-employed in response to over-regulation by government bureaucracies. However, informality cannot be ascribed simply to the notion that people enter into informal activities in order to avoid costs, taxation and government bureaucracies. This thus makes the legalist orientation towards the informal economy not appropriate for my study of the Ghanaian economy today. This is because other structural and economic constraints have a role to play, such as severe wage restraints, high rates of retrenchments in public and private formal employments, educational level restraints and so on have significantly led to people's involvement in the informal economy[11]. The legalist view also tends to suggest that the informal economy is independent of the formal economy.

This over simplicity and weakness in the conceptualisation of the informal economy by the dualists and legalists has led to the third theorisation of the informal economy by the structuralists. The structuralists view the informal economy as being subordinated to the formal economy and argue that privileged capitalists in the formal economy seek to erode employment relations and subordinate those who work in the informal economy in order to reduce input and labour costs and increase their competitiveness. In their view both informal

[11]Further details of these factors will be discussed later in this chapter.

enterprises and informal wage workers are subordinated to the interests of capitalist development, by providing cheap goods and services (Moser, 1978; Castells & Portes 1989; Carr & Chen 2001; Chen, 2007; Chen, 2012; Roberts 2013). Palmer (2004) maintains that the informal economy subsidises the profit of the formal sector because the informal economy produces goods and services at a very low cost, which then enables the formal sector to make a profit by paying a low minimum wage. Yussuf (2011) points out that the hiring of people or subcontracting by the big corporations or large capitalist firms is not informal but a part of formal labour relations.

Studies by the structuralists specifically on subcontracting, argue that what appears as informal economy activities are distinctively different in levels of capitalisation, firm size and management style from the established firms of the formal sector. But they may function simply as the disreputable and less-visible production end of the established firms. Therefore making this conclusion and extending this perception into the situation in which tiny firms sell to large buyers and buy their manufactured inputs from factories then, seems to call into question the whole notion of two "different economies" (Peattie, 1987: 856). In this context, Peattie (1987) notes that one should be mindful that most housing policies of developing countries produce houses by subcontracting small enterprises and also involve owner participation in the building process; therefore, to give names to such activities and combine them as one and then call them an informal economy does not give a clear understanding of these activities. It is also noted that there is also a linkage between formal and informal enterprises in the sense that finished goods and services are supplied through direct transaction or subcontracting arrangements. This conceptualisation of the informal economy by structuralists subscribes to the notion that the informal and formal economies are intrinsically linked, though the formal economy exerts a dominant power relationship over the informal economy in its own interests. Within this perspective, instead of conceptualising the informal economy as a safety net for the marginal poor or of micro-entrepreneurs avoiding government bureaucracies, the emphasis is on the interconnections between the formal and informal economy.

The structuralist notion of informal economy has been noted in writings of others scholars like Bromley (1978: 1161) who also remark that informal sectors are not "independent, unorganised ... little related to the authorities or big business" as shown in ILO studies, but

they have an important connection with the formal sector. For instance, studies in Cali, Columbia have shown that the majority of traders are within the "potentially exploitative working relationships with the large enterprises" (Bromley, 1978). In addition, Trager (1987) also argues that informal workers involved in food distribution and food processing (namely, market traders of agricultural produce), do not only buy and sell the commodities but also organise their distribution and movement from place to place within the marketing system. Therefore, the large numbers of women selling food are, in effect, processors of raw agricultural produce into consumable foods.

Chen (2007) and Sparks & Barnett (2010) also note the consumer linkage between the two sub-economies as people from all sectors buy goods and services from informal workers. Goods produced by the large capitalist firms are often marketed by informal enterprises. Aryeetey et al. (1996), Sindzingre (2006), and Sparks & Barnett (2010) also observe that forward as well as credit linkages exist between the two economies because: first formal economy firms buy inputs from those produced in the informal sector, and second the informal economy applies and obtains loans from the formal economy such as the banks; both of which exemplify the interrelationships between the formal and informal economy.

Also equally important is the fact that the reliance of informal enterprises on indigenous goods is lacking in certain areas because many small-scale enterprises now depend on imported goods rather than indigenous ones (Swaminathan, 1991). These imported goods are purchased from the big firms, therefore, as the marketers of their goods; small entrepreneurs show that there is a link between both types of enterprise. In Ghana, for instance, goods such as textiles, computers and mobile phones, *inter alia*, are largely imported and marketed by micro and small enterprises (MSEs) businesses to the final consumer. A study in the urban informal economy of African countries by Sethuraman (1977) reveals that informal enterprises sell imported goods, an example of which is Ghana's informal manufacturing and repair enterprises that depend on imported raw materials and spare parts.

2.2.2.1 Mobile phones and their bridging role between the formal and informal economies

Today, the interconnections and linkages between the formal and informal economy are reflected in the prevalence and widespread use of mobile phones and associated services, particularly in African countries. Mobile phone handsets are often manufactured and finished goods from the formal economy — big capitalist firms or big corporations in the developed

countries. However in other countries production, branding and marketing of mobile phones is not only rooted in the formal economy and subjected to control, regulation and supervision. Hon Hai Precision Industry Company, better known by its trade name Foxconn (*Fushikang*), is a Taiwanese-owned company, with most of its factories located in Mainland China. It is currently the world's largest contract electronics manufacturer and makes most of its money as a made-to-order manufacturer, not by selling its own brand products. Foxconn manufactures and assembles consumer electronic products (such as laptops, desktops, tablets, Pads, iPhones, cameras) for companies like Apple, Nokia, Dell. It is the largest private sector company in China and the world's largest employer with a workforce of about 1.4 million. Most of the workers of Foxconn are rural migrants and student in-turns. In other words Foxconn outsources and subcontracts casual labour in its production as rural migrants and students are hired to mine the minerals used in production, the assembly and sales through call centres, such informal arrangement involved in by Foxconn exemplify the interrelationship between formal and informal economy. Foxconn, as a hired contractor and supplier of electronic goods such as mobile phones, exemplifies informality in the manufacturing of mobile phones (Chan, 2010; Chan & Ngai; 2010; Ngai & Chan; 2012). These informal arrangements with Foxconn by companies like Apple, Nokia by Foxconn show the informality in the production of mobile phones as well as the interconnections of the formal economy with the informal economy.

The marketing of mobile handsets and services from the big corporations or large enterprises again reflects the linkage between the formal and informal economy. For instance in Ghana mobile phone services such as airtime or credits are the main business of informal sole-proprietor enterprises. One can thus argue that informality in terms of mobile phone services being rendered through informal workers[12] is due to the minimum control and regulation of SIM cards or airtime sales as mobile phone traders can purchase these mobile services from the mobile phone network providers' office and then sell them direct to customers. In this context, the services of the mobile phone network providers (formal companies) are often rendered through these informal sole proprietor businesses. This also reflects the connection between the formal and informal economy.

The linkage between the formal and informal economy based on mobile phones has been noted in the writing of Trager (1987) when he notes that the prevalence of mobile phones has

[12]These are often Informal MSEs in the form of sole proprietorships.

led to informal employment opportunities in trade and commerce. Thus the emergence of a formal sector industry can lead to new opportunities in areas like trade and such linkages are not necessarily benign or exploitative as argued by Sethuraman (1976/77) but rather reflect the interrelationships between the subcomponents of the economy.

With mobile phones and its associated services playing a role in bridging the interconnections between formal and informal economy suggest that mobile phones have become available to all, mobile phones are no longer restricted to actors of the formal economy. This brings to the fore the argument of mobile phone and its associated ICTs likely to reduce the digital divide with regards to material access (i.e. having a mobile handsets), as assessing digital divide has been focusing on the haves and have nots – ownership to material access. However this has been disputed by scholars (e.g. DiMaggio & Hargittai, 2001) and could be misleading, for instance in the case of mobile phones since they have become prevalent thus such disparities can no longer be assessed focusing on material access. With this notion inequalities of mobile phones and its associated ICTs can no longer be assessed focusing on access, that is the have and have-nots but the focus has shifted to the way the technology is used (quality of use) — digital inequality. Usage data thus become important in assessing the digital divide (further details on digital divide or inequality will be discussed in chapter three). Nevertheless the prevalence of mobile phone (e.g. in manufacturing or production, marketing and ownership as discussed above) in linking the formal and informal economy, thus not of 'separate sectors' adds to the debate on the conceptualisation of informal economy suggested by the structuralists.

Given this noted examples of interconnections and interdependencies explain clearly the structuralist conceptualisation of informal economy. They therefore emphasize for instance how formal and informal economic activities are utilised in the production of formal goods and services, as a way to subsidize the cost of labour intensive production, therefore formal economy involves in subcontracting and outsourcing arrangements. The interconnectedness is also shown through the role mobile phones play in bridging the linkage between the formal and informal economy. These noted examples (as discussed above) following the conceptualisations by the structuralists suggest to me that the informal economy is heterogeneous and this approach therefore provides the best means to conceptualise the Ghanaian economy.

To sum up from the preceding discussions on the genesis, diverse conceptualisations and approaches through to highlighting the interconnections between the formal and informal economy, it is noted on the whole that the nature of work and employment involves different phases and positions of the workforce in achieving the objectives of the economic sector. In the process of production and distribution of goods and services, there is, on the one hand, a labour force whose activities are regulated and under government control which make its operations less flexible, therefore described as formal, but on the other, there is the labour force whose work activities are flexible, lack government regulation and controls, and that often use their own supervisors, and also are able to recruit others informally to do their jobs. This is exemplified for instance by big corporations or capitalist firms that hire people to allow involvement in the production process and render activities in a much more flexible way have shown that there is some kind of informality in the economic sector; however, that does not mean those workers are a separate economy, rather just one economic sector which has created another segment as part of it. As argued the informal economy is already an integral part of the formal economy. To put it bluntly, if the informal economy did not exist, the formal economy would have to invent it (Sassen, 1997). It is therefore, important to note that there are linkages and interconnections between the formal and informal economy, as workers in their different phases and roles contribute to the realisation of the role of the economy. It would be therefore reasonable to move away from the clear cut distinction between the formal and informal economy as they are not two separate 'sectors'. Moving away from the dualist and legalist orientation would help us not to lose sight of the interconnections and interdependencies as well as benefits derived from workers in the whole economy. For this reason the structuralist conceptualisation of informal economy seems appropriate to situate this study.

2.3 Rethinking of the use and relevance of the term 'informal economy'

After many years of 'hunting the Heffalump' leading to volumes of debates, diverse conceptualisations and approaches of the term 'informal economy' with reference to nature of employment (wages or self- employment), size of activity (large or small scale), earnings (high or low income) and taxation (enumerated or unenumerated), registration of enterprises, category of people (poor, marginalised, unskilled, illiterates) and so on; Hart argues that economic theory proceeds by means of abstraction but it is important to consider from time to time what is not considered. For him the conceptualisation of the formal-informal dualism can be viewed in at least three ways:

(i) the informal may be the variable content of the form; thus street peddlers of cigarettes invisibly complete the chain linking large foreign firms to consumers.

(ii) it may be the negation of formal institutions, whether tax evasion, shop-floor resistance or the world traffic in drugs.

(iii) it may be the residue of what is formal, that is more or less independent of it, not predicated on it, simply other: much of the Third World's countryside is so alien to the urban-based, state-made economy that it would be nonsensical to suggest a dialectical relationship between the two (Hart, 1987).

Hart therefore posits that if the conceptualisation of 'informal economy' is restricted at all, it seems reasonable to concentrate on the first two constructions – the relatively unspecified content of an economic form and the subversion of such a form, its negation. The informal economy can then be taken to be an economic variant of the general theory of formal organizations. This is because Hart's conceptualisation of the informal economy in the 1970s was derived from Weber's theory of rationalisation, which refers to the growing scope of bureaucratic organisation and calculation of rewards in the history of western economic institutions (Hart, 1987).

Hart (1987) also points out that with the volume of debates and diverse conceptualisation of the informal economy, attention has not been paid to the original usage of the term in English. In normal English usage 'informal' refers to behaviour which relatively speaking lacks form. Form is what is regular, predictable, reproducible and recognisable, and it is intrinsic to all social behaviour in some degree. Therefore identifying something as informal suggests it fails to reproduce the pattern of some established form. The formal economy is therefore the epitome of whatever passes as regularity in contemporary understanding, here the institutions of modern nation states, the more corporate levels of capitalist organisation and the intellectual procedures devised by economists to represent and manipulate the world. The informal economy on the other hand is anything which is not entailed directly in these definitions of reality. From the stand point of high civilisation whatever it cannot control or comprehend is conceptualised as 'informal' that is irregular, unpredictable, unstable, even invisible. People who appear to be in this economic zone (informal economy) however believe they have social forms which enable them to go about their daily activities even though these forms are usually less powerful and less rigid than those under written by state law and immense wealth (Hart, 1987). Thus informality is how people devise their own

means of survival and sometimes the prosperity in the urban markets that spring up spontaneously to meet their needs. In this context informality lies in the eyes of the beholder. This suggests that informal economy does not exist in any empirical sense, it is just a way of contrasting some phenomena with what we imagine constitutes the orthodox core of our economy (Hart, 2007).

Hart's paper, presented at the urban unemployment in Africa conference in 1971, argued that the urban poor in Accra were not 'unemployed' but working, though mainly for low and irregular income. These irregular incomes, unregulated by law and invisible to bureaucracy, were an important part of urban economies that had grown up largely without official knowledge and control. However, the introduction of neo-liberal regimes in the USA, Britain and elsewhere changed the notion that the informal economy was a source of employment for poverty alleviation in poor economies in the 1980s. Therefore in contemporary times the conceptualising of the informal economy as unregulated activities of the Third World self-employed urban poor or the urban masses supporting themselves in invisible ways and at some perceived risk to public safety is outmoded. This is because informal economic activities or unregulated activities are not exclusively in the domain of urban poor of the third world but has extended to include a wide range of activities in rich and poor countries alike. The extension of the scope of the concept 'informal economy' to embrace both rich and poor countries, governments and business, casual labour and the self- employed, corruption and crime when taken with the wholesale the devolution of central bureaucracies, compared with years ago when he did the study, leaves a question mark over its continuing usefulness today (Hart, 2007).

Nevertheless, questioning whether it is useful to continue using the term today, Hart argues that the use of the concept has become an eye opener to recognise all economic activities being involved in as well as all category of people and the way they earn their living in addition to how they gain their source of income (Hart, 2007). I believe the term 'informal economy' is useful because it has brought attention to and revealed the significance of all the small economic activities in particular women's micro- activities that were not previously recognised in the analysis of development economies. It has also revealed the nature of employment as well as the differences in the operations of work activities in the economic sector with respect to flexibility, government control and regulation.

It is also worth noting that Hart's ethnographic account of the lives of Ghana's urban migrants in the 1970s has given recognition to informal activities in the country and this has also led to the recognition of Ghana's large informal economy. Again such ethnographic accounts of economic activities by Hart in urban Ghana has extended to other countries and giving cognisance to economic activities and nature of employment leading to consideration of such economic activities and category of people in such activities in policies and developmental issues. Over the years, the use of the term to a large extent has also given women recognition and drawn attention to their status and position as they play their role in socio-economic development with reference to their informal economic activities. The term thus becomes relevant in this study as it tends to explain the nature of work activity – micro-trade and the nature of informal economy the study is focusing on.

Considering the study focus and the country as well as the nature of work involved, the structuralists view or theorisation of the informal economy seems appropriate when thinking of the Ghanaian informal economy and the nature of employment of the majority of women. This is because given the heterogeneous nature of the informal economy in Ghana (to be discussed later in detailed in this chapter) the discussion of the informal economy and the diverse conceptualisations become relevant in order to appropriately situate the study location (Accra, Ghana) and the study participants — informal women micro traders. This makes the term 'informal economy' relevant for the study. Nonetheless as argued by Mead and Morrison (1996) the informal economy is an "elephant" and that unless it is precisely defined, it is difficult to understand what the author means (Mead & Morrison, 1996: 1611). As also noted the conceptualisation of the informal economy lies in the eyes of the beholder (Hart 2007). For this reason, in this study, I will conceptualise informal economy as any income-generating activity in the form of self-employment[13] that is flexible in the undertaking of its operations and is characterised by an absence or minimum of state regulation and control.

[13]Self-employment here refers to either working alone or in partnership with others.

2.4 The Informal economy in Ghana and Accra

With all the above discussions showing the complementary links as well as the relevance to the term 'informal economy', the discussion moves on to the next section: the economic sector of Ghana with a focus on its informal economy and highlighting the gender component as well as their main economic activity involved in. However to understand clearly the Ghanaian informal economy, the discussion begins with background information on the social structure of Ghana and its capital Accra.

2.4.1 The social structure of Ghana and its capital, Accra

2.4.1.1 Ghana: Social and demographic background

Geographically, Ghana is located in Western Africa and is bordered on the south by the Gulf of Guinea, on the west by Cote d'Ivoire, on the east by Togo and on the north by Burkina Faso. Socially and demographically, Ghana has a total area of 238 533 sq km[14] and a population of 24.6 million made up 49 percent males and 51 percent females[15] and with an estimated population growth rate of 2.7 percent per annum[16]. About 51 percent of Ghana's population is in urban areas and the country has ten administrative regions with 110 districts. The Ghanaian population is made up of many ethnic groups; the largest being the Akan (45.3%) followed by the Mole-Dagbon (15.2%), Ewe (11.7%), Ga-Dangme (7.3%), Guan (4%) and Gurma (3.6%)[17]. Owing to the many ethnic groups, many different languages[18] are spoken in the country, of which the most important are Asante (14.8%), Ewe (12.7%), Fante (9.9%), Boron (Brong) (4.6%), Dagomba (4.3%), Dangme (4.3%), Dagarte (Dagaba) (3.7%), other language groups (36.1%), including English, the official language of the country.[19]

Although a greater proportion of Ghana's population are women (more than 50%) they constitute a little over one third (34.7%) of the population of heads of households[20]. However, the number of female-headed households increased in 2010 (35%) compared to the 2000 census (31%). The urban areas also experienced a higher number of female-headed

[14]CIA World Fact Book (2013).
[15] Ghana Statistical Service (2013a)
[16]CIA World Fact Book (2013).
[17]Ghana Statistical Service (2012); CIA World Fact Book, 2013.
[18]There are about fifty languages in Ghana (Adika, 2012).
[19]CIA World Fact Book (2013).
[20] A head of a household is the one who generally has the economic and social responsibility of the household. A household is a person or group of persons who live together in the same house or compound and share the same housekeeping arrangements. In general it consist of a man, wife , children and some other relations who may living with them.

households (37.9%) than in rural areas (30.6%). The higher proportion of female-headed households in urban areas could be attributed to a confluence of factors that include independent migration of single women (or without their companions) to the cities in search of jobs, educational enhancement, or separation from spouses due to accommodation or other domestic challenges[21].

2.4.1.2 Education and literacy levels

In Ghana, almost one third (32%) of the population has no education, which automatically restricts entry into occupational categories requiring some level of formal training. The 2010 Population and Housing Census (2010 PHC) found education was exemplified by a wide disparity between men and women as men have consistently enjoyed an advantage over women in educational advancement in Ghana. Although women constitute about 51 percent of Ghana's population, illiteracy is more prevalent among women than men: almost four out of ten active women (38%) have never been to school compared to men (only one quarter, 25.6%). According to the 2010 census, the proportion of active men with post-secondary education was more than twice that of active women (namely, 7.6% as against 3.5%); the proportion of men with post-secondary diplomas and higher education was almost twice that of women (namely, 5.5% as against 3.1%). For those who had attended school in the past, 54 percent of them (both men and women) had Middle School or Junior High (Secondary) School (JHS/JSS) as their highest level of education, while a smaller proportion (15.5%) had attended Senior High (Secondary) School (SHS/SSS) or Secondary[22]. There were relatively more women (53.0%) than men (40.5%) with Primary and JSS/JHS as their highest level of education. This implies that women are more likely than men to drop out at the Primary and JSS/JHS levels.[23] The table below shows the differences or inequality in educational achievement per sex in Ghana.

[21] Ghana Statistical Service (2013a).

[22] In 1987 Ghana's Ministry of education introduced a restructured educational system that gradually replaced the British 'O' Level and 'A' Level system. The new reform shortened the pre-university education structure from 17 years to 12 years by introducing Junior High (Secondary) school (JHS/JSS) to replace Middle School. The Secondary school ('O' and 'A' Levels) was replaced with Senior High (Secondary) School (SHS/SSS). Junior High School comprises Forms One to Three and it is part of the country's nine-year basic education. The nine years of basic education comprise three years of JHS and six years of primary school (Keteku, 1999).

[23] Ghana Statistical Service (2012).

Table 2.2 **Ghana's economically active population of 15 years and older (percentages of levels of education by sex)**

Educational level	Men	Women
Never attended School	25	38
Primary	10.0	13.0
JSS/JHS	20.3	19.4
Middle	19.0	14.3
SSS/SHS	9.4	6.2
Secondary	3.6	1.7
Vocational/Technical/ Commercial	2.9	2.4
Post-middle/Secondary certificate	1.7	1.3
Post-secondary diploma	3.9	2.0
Bachelor's degree	2.8	1.2
Postgraduate: (Certificate, Diploma, Master's/PhD degrees)	0.9	0.3

Source: Ghana Statistical Service (2013a).

From the table above the differences in the distribution of educational opportunities is likely to have important implications for access to employment in the formal economy especially for women, if formal economy jobs require higher levels of educational attainment. This suggests that with limited access to educational opportunities especially for women, they will be constrained and tend to finding employment opportunities in the informal economy. It is observed that formal education particularly post primary education is noted to have a positive effect on women's labour force participation and to a large extent on job opportunities (Kabeer, 2012).

In Ghana, as elsewhere, education is an important determinant of people's employment options, and both the level of educational attainment as well as the quality of education available has an impact on the employment options available to individuals seeking work (Heintz & Pickbourne, 2012). Ghanaian women traditionally occupy key positions alongside

men in the production of goods and services for subsistence and for the market. Unfortunately, many of these women in Ghana have not attained high levels of formal education. Where girls went to school, most of them did not continue after receiving their basic education certification and others did not even complete the elementary level of education. For example, as noted in the table 2.2 women who attended school in the past, only 1.7 percent of them have post middle or secondary education compared to men (3.6%). This low level of female education is attributed to misunderstanding and cultural barriers such as the fear that sending girls to school threatens their chastity; the concern that girls who go to school are unable to perform chores at home; and the conception, that enrolling girls in school results in lower household productivity (Madah, 1999).

Atuahene & Owusu-Ansah (2013) also explain that socioeconomically, poor parents tend to sacrifice their girls' education in favour of males when they have to make the financial decision to send only one child to school. Culturally, in most rural areas when family budget is tight, there is the entrenched perception of parents sacrificing their daughters' education and request of them to participate in economic activities to supplement household income. Girls are more likely than males to support their family either by engaging in selling goods and services or babysitting their younger siblings especially in the rural areas. Berry (1994) and Madah (1999) also point out that there is an opportunity cost of sending daughters to school as the girl-child's labour is considered indispensable to the survival of many households particularly in rural areas. This is because some parents are reluctant to send their daughters to school because their labour is needed in the home and on farms. As articulated by Daddieh, ". . . negative parental attitudes and cultural practices have tended to devalue female educational achievements, and thereby undermine their educational participation" (Daddieh, 2003:23). Thus going up the educational ladder to attain secondary education and beyond is attributed to factors which include: financial stress on the families (particularly poor families, late marriages, parents' level of education, lack of role models for girls in school, high incidence of poverty in the family cause early labour entrance by children and so on.

The resistance to female education also stemmed from the conviction that women would be supported by their husbands. Also, parents feel that since the girl-child is going to marry into another family, sending her through school is not worth the investment. In some circles, there was even the fear that a girl's marriage prospects dimmed when she becomes highly educated

(Berry, 1994, Madah, 1999). Heintz & Pickbourne (2012) add that in a labour market in which good quality formal economy jobs require advanced degrees, inequalities in the distribution of education constrain the choices of some and expand the choices of others. However, other factors such as access to social networks may also be an important determinant of the kind of employment that one is able to find in Ghana. This is because access to social networks based on kin and ethnicity can be important in providing access to jobs in the formal economy as social networks based on a shared educational history, such as having attended the same secondary school or university, can sometimes be as important as kin and ethnic networks in opening up doors to employment in the formal economy. Thus, for the majority of women in Ghana, labour market options are severely constrained by gender inequities in access to education and the gendered nature of social networks among others to which they can have access to formal employment. This suggests that formal education has a significant role in employment opportunities in the formal economy because social networks attained through formal education can open employment opportunities in the formal economy. Therefore with higher educational attainment among men in Ghana, men will tend to have higher employment opportunities in the formal economy compared to women.

Considering the low educational levels of women in Ghana and the wide disparity with men, Greenstreet (1978) and Amu (2005) argue that the relatively low educational levels of women is one of the factors that has contributed to employer's preference for men workers and this has led to the predominance of women in the informal economy. Even where a woman is qualified for employment, the employer may be unwilling to engage her because of reservations about frequent absenteeism for reasons of pregnancy, child-care or other domestic-related interruptions.

In Ghana, educational levels are associated with literacy. This is because English is the official language and the medium of instruction in schools. The English language has therefore grown rapidly in the country to become a formidable force in social interaction and in all dialogues relating to democratic practice and governance as well as the source of debates among academicians, policy makers and politicians (Adika, 2012). Being literate is therefore associated with one's literacy level in English which is associated with formal education. Although literacy rates in Ghana (total 74.1%) are much higher among men (80%) than women (68.5%), women experience higher illiteracy (67.1%) than men (31.5%). According to the 2010 PHC a significant number of the population can read and write in

English. About one-fifth (20.1%) can read and write in the English language only, while 54 percent of the population can read and write in at least one Ghanaian language. The 2010 census also shows that just a little under half of the total population (45.8%) are literate in English and in one or more Ghanaian languages. Men, who are literate in English only, or in combination with a Ghanaian language, exceed the proportion of women. The population who are literate in only a Ghanaian language (to the exclusion of other languages) is generally less (7.0 %) but higher among women (7.9%) than for men (6%)[24]. Literacy, therefore, also exemplifies another disparity among women and men in Ghana.

2.4.1.3 Economic activity and occupation

Ghana is well endowed with natural resources and agriculture accounts for roughly one-quarter of the GDP and employs more than half the workforce, mainly small landholders. The services sector accounts for about 50 percent of the GDP.[25] The economically active labour force consists of agriculture (56%); industry (15%); and services (29%)[26] with three predominant occupations: (i) agriculture, (namely, skilled agricultural, forestry and fishery workers) constitutes over 40 percent of the economically active population; (ii) service and sales workers (21.2%); and (iii) craft and related trades workers (15.2%).[27]

Skilled agricultural, forestry and fishery work remains the dominant occupation for men (44.9%) rather than women (37.7%). However, a much higher proportion of women (31.7%) than men (10.2%) are engaged as service and sales workers. The next highest occupation is in industrial activities, the majority of which are in wholesale and retail trade (18.9%) and manufacturing (10.8%).[28] Women predominate in the wholesale and retail trade sector (22.6%) compared with men (8.7%).[29]

The industrial trend changes significantly in Ghana's urban population with a higher proportion employed as sales and service workers (37.0%), while in the rural areas the dominant occupation is agricultural, forestry and fishery workers (71.0%). In urban areas, the majority of employed women are engaged as sales and service workers (53.5%), whereas

[24]Ghana Statistical Service (2013a).
[25]Ghana Statistical Service (2014).
[26]CIA World Fact Book (2013).
[27] Ghana Statistical Service (2013a).
[28]Ghana Statistical Service (2012).
[29]Ghana Statistical Service (2013b).

men are more likely to be engaged as craft and related trades workers (21.9%), or as skilled agricultural, forestry and fishery workers (21.0%). The most common level of educational attainment is JHS/JSS (Middle school)[30] for service and sales workers (39.2%) as well as craft and related trades workers (38.1%)[31].

It is worth noting a few significant features in the data about the differences between men and women in employment. The first is the fact that proportionally more men are in agriculture, forestry and fishing (45.0%) than women (37.8%); however, the fact that nearly four in every ten women work in this occupation attests to the important role women play as partners to men in these activities. The second notable feature of the data is the predominance of women in the service and sales category. Almost a third of women (31.6%) are engaged as service and sales workers; which is more than three times that of men (10.1%).

In Ghana, women have more limited opportunities for employment in the formal economy because of their lower levels of education and other factors associated with female employment, especially in the formal economy. Women, therefore, tend to rely more on their own ingenuity and efforts to generate their employment and to maintain themselves and or supplement family income. This is clearly shown in the 2010 census where there are more self-employed women; often without employees. In the more recent 2010 census, in fact, the majority (64.8%) of Ghana's economically active population are self-employed with a relatively higher number of self-employed women (69.4%) than men (60.0%)[32] and nearly 47 percent (46.8%) of currently employed persons are self-employed without employees. The status of being self-employed without employees is also a predominant feature among the majority of service and sales workers (57.9%) and the skilled agriculture, forestry and fishery workers (52.8%). This is the most common employment status for craft and related trades workers (45.5%) as well.[33]

It has been noted that Ghana's service sector is increasing rapidly and outpacing both the agricultural and industrial sector. According to the Ghana Statistical Service (2014) the services sector continued to grow and recorded the highest growth (8.9%) in the year 2013

[30]For those who attended school in the past before the educational reform in Ghana.
[31]Ghana Statistical Service (2013b).
[32]Ghana Statistical Service (2012).
[33]Ghana Statistical Service (2013b).

followed by industry (7.0%) with agriculture recording the lowest growth rate of (5.2%)[34]. The service sector remains the largest sector, contributing about half, (49.5%) of the GDP in 2013 from 48.4 percent in 2012 (Ghana Statistical Service, 2014).[35] Amu (2005) has pointed out that women's participation in Ghana's service sector is highly skewed towards wholesale and retail trade (55%).

2.4.2 The social structure of Accra

2.4.2.1 Background and demographic characteristics

Accra,[36] the capital city of Ghana is located in the south-central part of the country and shares borders with the Central Region to the west, Volta Region to the east, Eastern Region to the north, and the Gulf of Guinea to the south. It is the smallest of the ten administrative regions, occupying an area of 3245 square kilometres or 1.4 percent of the total land area of Ghana. Accra is noted as one of the fastest growing cities in Africa with an annual growth rate of 3.1 percent. According to Ghana's census (2010 PHC), Accra is the most densely populated region of approximately 1236 people per square kilometre. Accra has also witnessed a significant decade of growth in population from the 2000 census figure of 1.7 million to a little over 4 million according to the 2010 census (Asiedu & Agyei-Mensah, 2008; Ghana Statistical Service, 2013**c**).

Accra was founded by the Ga people in the late 1600s (Ardayfio-Schandorf et al., 2102). The city is still referred to as 'Ga' by most Ghanaians as it is the homeland of the Ga, the indigenes of the region, although there are a number of other ethnic groups in Accra. The early development of Accra was associated with the trading activities of Europeans along the coast by the end of the seventeenth century (Asiedu & Agyei-Mensah, 2008). This is because Accra was home to the Portuguese, Swedish, British, Danish, Dutch and French who built forts in the town and used the area as a centre for trade during this century (Abdallah, 2007; Ardayfio-Schandorf et al., 2102). The development of Accra is also associated with the transfer of the administrative capital of the then Gold Coast (now Ghana) to Accra in 1877 (Asiedu & Agyei-Mensah, 2008).

[34] In the year 2009 the service growth rate was 5.6%.
[35] Ghana Statistical Service (2014).
[36] The word 'Accra' is derived from the Akan word "Nkran" meaning "army of ants" in reference to the numerous anthills located in the surroundings of Accra (Accra Metropolitan Assembly, (AMA) 2006).

Greater Accra is the most urbanised region in the country with the highest urban population (90.5%) which constitutes 16 percent of the country's total population.[37] A contributing factor for this high population[38], since independence (1957) to date, is the concentration of industries, business and commercial activities, political and administrative functions in the city as well as migration from other regions. Lyons and Snoxwell (2005) have also noted that the city attracts, not only migrants from all over the country, but also from neighbouring countries.

There are many ethnic groups found in Accra. The largest ethnic group in Greater Accra is the Akan (39.7%) followed by the Ga-Dangme (27.4%), Ewe (20.1%), Mole-Dagbani (5.2%), Guan (1.9%), Gurma (1.6%), Grusi (1.3%) and Mande (0.7%).[39] The inflow of people to the city has made Accra a cosmopolitan city and with people from all over the country and neighbouring countries, Accra is now also multilingual city. A language survey in Accra in 2005 has revealed that although Accra is multilingual, English, Ga, Akan (Twi) and Hausa are the main languages spoken in Accra. The study also revealed that Akan (Twi) seems to be spreading as a lingua franca in Accra (Dakubu, 2009). It is observed that in Accra, Akan (Twi), Ga and Ewe are the predominant local languages spoken (Adika, 2012) and this suggests that these three languages are the main ones spoken in Accra markets.

In Greater Accra there are about 36 percent of male household headships compared to female households (18.3%). Although there is a higher proportion of male-headed households than female-headed, the proportion of female households has increased from 13 percent in 2000 (Ghana Statistical Service, 2005) to 18 percent in 2010. Female household headship is becoming common in Greater Accra and it has been attributed to low marriage registration, high divorce rates and widowhood.[40]

2.4.2.2 Education and language literacy

In Accra, the proportion of economically active men (73.1%) is higher than that of women (68.9%) with 12 percent of the economically active population having no education. However, 50 percent have a basic level of education, 18 percent have a secondary education and 6 percent have a tertiary education. In the case of school attendance (6 years and older)

[37] Ghana Statistical Service (2012).
[38] Ghana Statistical Service (2013c).
[39] Ghana Statistical Service (2013c).
[40] Ghana Statistical Service (2013c).

59 percent have had a basic level of education, followed by 21 percent with a secondary education; 7 percent vocational/technical/commercial; 6 percent tertiary; 6 percent post-Secondary Diploma; and 2 percent post-Middle School Certificate. It was also found that among those who have ever attended school, the highest proportions have basic (52.6%), secondary (15.7%) and tertiary (5.1%) education. About 60 percent of all those with some education in Greater Accra have pre-primary and basic education only.

A higher proportion of women (13.4%) have never attended school compared with men (6.5%), and it therefore follows that a higher proportion of men have higher levels of education than women[41]. Below is a table showing the economic Accra's active population 15 years and older by level of education and sex.

[41]Ghana Statistical Service (2013c).

Table 2.3 **Accra's economically active population 15 years and older (percentages of levels of education by sex)**

Educational level	Men	Women
Never attended School	7.4	16.4
Primary	8.0	12.6
JSS/JHS	22.1	22.8
Middle	18.6	17.2
SSS/SHS	14.3	11.0
Secondary	6.7	4.3
Vocational/Technical/Commercial	6.2	5.4
Post middle/Secondary certificate	1.7	1.9
Post-secondary diploma	6.7	4.0
Bachelor's degree	6.2	3.5
Post-graduate: (Certificate, Diploma, Master's/PhD degrees)	2.2	0.8

Source: Ghana Statistical Service (2013a)

The table above clearly shows the educational disparity of gender in Accra. Women often do not get to climb the academic ladder owing to factors (mentioned earlier) such as gender streaming where parents have to make a choice or decision as whether their girl or boy child should go to school because of financial stress. Parents tend to send their boy child to school while the girl child is kept home to help in the housekeeping or in situation where the mother is a trader; she joins the mother in the market and begin to learn the skills of trading. Men seem to have better options in this case as they would have higher education than women.

Accra is the region which houses the administrative and commercial capital and attracts the greatest number of educated migrants seeking jobs; therefore literacy is higher in Greater Accra (89.3%). However men (93.6%) have a higher literacy rate than women. Accra also has the highest proportion of the population who are literate exclusively in English (34.9%) presumably because of its large expatriate population. The 2010 census found that nearly 11 percent (10.7%) of Accra's population aged 11 years and older is not literate in any language and the proportion of non-literate women (14.7%) is more than twice that of men (6.4%). In terms of language literacy, more than eight in every ten people aged over 11 years in Greater

Accra is literate in English and a Ghanaian language (47.4%) or in English only (34.9%). This is followed by those who are literate in a Ghanaian language only (4.4%); in English, French and Ghanaian language (1.8%); and English and French (0.8%). There are higher proportions of literate men than literate women in all the language combinations except Ghanaian language only.[42] This suggests that for those without English literacy (associated with formal education) and having no agricultural activity as an employment option in the urban areas, they are forced to involve in non-agricultural activities owing to low level of education, as high formal education contributes to seeking employment in the formal economy in Accra.

2.4.2.3 Economic activity and occupation

Over the years, the city of Accra has expanded from the two original townships, James Town and Ussher Town which together are now referred to as Old Accra, the homeland of the indigenes of Greater Accra, the Ga) (Asiedu & Agyei-Mensah, 2008). Old Greater Accra, before its expansion, existed as a trading town which controlled the gold trade to the coast (Dakubu, 2009). The 2010 census revealed that in Accra a significant proportion of the economically active population are engaged in wholesale and retail trade (31.6%).[43] Anecdotal evidence has suggested that the city's day-time population is about three million and most of the inflow originates from the city's outlying towns and villages and consists of people who converge in the city centre to trade (Asiedu & Agyei-Mensah, 2008).

According to the 2010 census, the highest proportions of the economically active population (92%) in Greater Accra are services and sales workers (35.6%); followed by craft and related trade workers (21.0%); workers in elementary occupations (10.7%); professionals (8.1%); plant and machine operators and assemblers (7.0%); and managers (5.2%). The two leading occupational categories require neither expertise nor high educational training. More than half (51.1%) of employed women in Greater Accra are service and sales workers.[44]

Agricultural activity is not very common in Greater Accra due to its predominantly rural characteristics. In Greater Accra, significant proportions of the economically active population are engaged in wholesale and retail trade (31.6%); manufacturing (14.8%); and

[42] Ghana Statistical Service (2013c).
[43] Ghana Statistical Service (2012).
[44] Ghana Statistical Service (2013c).

accommodation and food service activities (9.1%); with only 5.2 per cent engaged in agricultural activity.[45]

The majority of Accra's employed population of 15 years and older are self-employed (48.4%) and a further 35 percent are employees; however, of the 49 percent who are self-employed the vast majority of them do not have any employees. It is also noted that the majority of the employed population in Greater Accra is in the private informal economy (73.3%) as evident in all the informal activities (mainly trading, retailing, etc.) that go on in Accra. This may be attributed to low levels of educational and professional training as well as the lack of employment opportunities in the formal sector. The private formal economy, which is generally presented as the engine of growth of the Ghanaian economy, employs 17 percent of the employed population in Greater Accra. The public sector employs a relatively small proportion (8.0%).[46]

Greater Accra has relatively more employees (25.4%) in the formal economy (public or private formal) than the other nine regions in the country.[47] There are higher proportions of employed women (82.6%) in the private informal economy than men (64.0%); and higher proportions of men in the public sector (10.1%) than women (5.9%), as well as in the private formal economy (23.9% versus 10.7%). Thus, higher proportions of men are in the formal and more secure employment sectors, while more women are in the informal and insecure sectors. Furthermore, higher proportions of employed women than employed men are in the informal and less secure sectors, with eight out of every ten employed women working in the private informal sector.[48] Accra has a large service sector with the informal economy absorbing the largest labour force.

[45]Ghana Statistical Service (2012).
[46]Ghana Statistical Service (2013c).
[47]Ghana Statistical Service (2012).
[48]Ghana Statistical Service 2013c).

2.4.3 The history and expansion of Ghana's informal economy

2.4.3.1 The beginnings of Ghana's informal economy

The origin of Ghana's informal economy can be traced back to the very beginnings of colonial capitalism in the Gold Coast (now Ghana). Ghana's colonial economy was characterised by primary commodity production for export; investments in mining, transportation and related services; infrastructure and public works; and social development and these key features led to colonial capitalism which introduced a dual economy (two sub-economies) in Ghana; the formal and informal economy (Ninsin, 1991; Adu-Amankwah, 1999) with both economies subdivided into private and public segments.

The formal economy covered essentially capital investment in mining, transportation, infrastructure, commerce, social services and administration with the characteristic wage employment for the operations of labour therein. The informal economy emanated from the promotion of primary commodities production for export and the import of consumer goods for domestic trade, which gave rise to large contingents of the labour force in both agriculture and petty trading who were either self-employed or hired under traditional or informal arrangements (Ninsin, 1991; Adu-Amankwah, 1999). Notably, Ghana's informal economy in its early stages was heterogeneous in that it provided for varieties of peasant proprietors and agricultural labourers, distribution agents, buyers, transport owners and employees, repairers, and so on (Ninsin, 1991).

Barwa (1995) observes that the Ghanaian informal economy in general is made up of the following characteristics:

- In Ghana informal economy enterprises are individually-owned and operated, generally for less than five years duration and often, the size is determined in terms of number of employees including apprentices and family members engaged or the capital invested.

- The sources of finance are mostly informal mainly from personal savings and borrowing from friends with interest rates closely linked to the prevailing high market rates.

- Most of the informal economy employees are young and not very highly educated as most of them have middle school educational background.

- Apprenticeship still remains the dominant channel for the transfer of skills and the inadequate level of vocational and technical training in the informal economy in Ghana is directly associated with poor management, particularly in financial records and bookkeeping.

- Women predominate in the service sectors and are involved in activities like food processing (64.2 per cent), trading (42.3 per cent) and dress-making (34.5 per cent) (sources: Yankson (1992), an unpublished paper on the mission of two delegates from the Economic Commission for Africa in July 1991).

- The reasons for entry into informal business are varied - ranging from an urge to eke out a living to the application of talent, joining a trade or the reinvest profits earned elsewhere (Yankson, 1992).

- In terms of marketing according to Yankson (1992), 84 per cent of the informal economy entrepreneurs sold their goods and services directly to the customers.

- Subcontracting is undeveloped and there are no proper linkages with the other sectors of the economy.

- The majority of the informal economy enterprises are sole ownerships with no paid employees.

Over the years, the Ghana Trade Union Congress (GTUC), in a leadership group survey in 1995, identified various informal activities in Ghana and divided them into urban and rural informal activities (Adu-Amankwah, 1999). In the rural areas, informal activities included agricultural activities, predominantly: farming, fishing and fish processing activities, rural agro-based processing activities such as cassava processed into gari[49] and wood carving. The rural informal economy relies on family labour and traditional forms of social arrangements and protection mechanisms.

On the other hand, the urban informal economy consists of producers, wholesalers, retailers and consumers. There are also intermediary service providers along the value chain such as suppliers of raw materials to manufacturers on contractual basis. Labour relations in the urban sector are largely apprenticeship-based. Informal activities of urban areas at that time

[49]"Gari" is a dry granular food made from fermented cassava. There are many local variations in the processing of cassava into gari, but in general the cassava roots are peeled and grated before being dehydrated and left in sacks to ferment for several days. The fermented mesh is then sieved and fried (Dorosh, 1989).

included a wide range of operations that were grouped as (i) services, (ii) construction and (iii) manufacturing (Adu-Amankwah, 1999). The services category includes urban food traders and processors, namely, food sellers in the market, itinerant wholesalers and retailers, bakers, caterers and cooked-food sellers. These workers were mostly women, predominantly illiterate or semi-illiterate. They had acquired their knowledge and skills largely from family. They are also low-income earners and have no social security protection.

As noted the urban informal economy in Ghana is highly heterogeneous as activities within this economy range from petty trading in streets and markets to small scale manufacturing and servicing. The urban informal economy has also been associated with certain characteristics that have been grouped into four main categories by Ofori (2009). These include the following:

(i) Employment (characteristics of the people engaged in the informal economy).
(ii) Enterprise (characteristics of the activities in the informal economy).
(iii) Habitat (characteristics of the informal economy land and housing).
(iv) Credit (characteristics of the informal credit markets) (Farrell et al., 2000).

(i) The employment characteristics of the people engaged in the urban informal economy included:

- An absence of official protection and recognition such as not enjoying protection from the state machinery in the form of legislation against any unscrupulous fraudsters who may defraud such entrepreneurs in the course of business dealings because the operators in the sector do not want to be identified for fear of being taxed, so they avoid being recognised (Farrell et al., 2000; Ofori, 2009).

- A predominance of self-employed workers who operated from their homes most often, with others using any available public space (popularly referred to as 'no man's land'). With a table and a chair one could easily start up own business with family assistance (Farrell et al., 2000; Ofori, 2009).

- The non-coverage by minimum wage legislation and social security in the sense that most, if not all, people employed in the urban informal economy were often paid far

below the national minimum wage, and most employers failed to contribute to a pension scheme on behalf of their employees (Farrell et al., 2000).

- An absence of trade union organisation due to urban informal economy operators being individualistic in nature (compared to their rural counterparts) with a wide range of activities which make it extremely difficult for the formation of trade unions to protect the interests of members.

- Little or no job security in the sense that workers could lose their jobs at any time at the whims and caprices of their employers; and the employees cannot take any legal actions for any unfair dismissal as there is usually no binding contract of employment. Therefore, no compensation was usually paid for such dismissal (Farrell et al., 2000; Ofori, 2009).

(ii) The enterprise economic activities which were taking place within the informal economy were characterised by:

- A small-scale operation with individual or family ownership. Yankson (1992) noted that "the typical urban informal economy enterprise is individually-owned and operated".

- Ease of entry (flexible). That means the capital needed to start a business is relatively low; therefore, anyone at any time may decide to set up business in the urban informal economy. There were also no intense regulatory requirements for entering into that economy.

- Small in size. These businesses tended to rely more, if not solely, on locally available resources. For their raw materials, informal economy entrepreneurs depended largely on the local resources, primarily from the formal economy units in the cities (Barwa, 1995; Ofori, 2009). In this situation one can observe the interconnections between the formal and informal economy in Ghana.

(iii) The habitat characteristics of the informal economy related to the use of land and housing:

- They often operated in unauthorized vacant public or private land and in Greater Accra, and they often functioned in clusters closer to cities, especially those engaged in auto repairs and metal works, but might also have been strategically located at specific points to reach the maximum number of clients.

(iv) The credit characteristics are associated with credit facilities often granted on a very small scale as the informal economy businesses were not keen to grant large credit. The credit is usually granted to people known to the operators hence there was no need to critically assess the individuals being granted credit (Barwa, 1995; Ofori, 2009). This suggested that trust played a significant role in the granting of credits which indicated the absence of formal written contracts.

It is worth noting that Ghana has a National Daily Minimum Wage (NDMW) which applies to all forms of employment. However it is unclear how labour regulations relate to own-account workers without employees. Unfortunately, majority of informal economy workers are self-employed and are in control of their income and cannot be forced to declare their incomes. Many of them do not also keep records of their purchases and sales and incomes in the informal economy are irregular and can be subjected to environmental (weather) and market factors (demand and supply). The incomes of market traders for instance depend on profits made on goods sold or services rendered (Osei-Boateng & Ampratwum, 2011). These factors mentioned make it practically impossible to determine the turn-over of self-employed persons for instance in the area of taxation or levies. This suggests that although Ghana has a large informal economy contributing to socio-economic development, the exact or accurate revenue being generated is difficult to calculate or assess.

2.4.3.2 Expansion of Ghana's informal economy

Over the years, Ghana's informal economy has expanded and continues to rise in both rural and urban areas owing to many factors. One of these factors is due to the increase of the labour force in the economy. According to Nyamekye et al. (2009), the size of Ghana's informal economy in the 1980s was twice that of the formal economy and it increased five and half times in 1990s (Nyamekye et al., 2009). It is noted that women predominate in Ghana's informal economy (Osei-Boateng & Ampratwum, 2011). However, the female

labour force is increasing in the formal economy, although only gradually. According to the 2010 census, the proportion of women in the formal economy increased from 9 percent in 2000 to 11 percent in 2010, indicating a steady increase over the decade.[50]

Barwa (1995) and Asiedu & Agyei-Mensah (2008) argue that the implementation of the Structural Adjustment Programmes (SAP) in the mid-1980s was one of the predominant ingredients that led to a rise in the numbers of people in Ghana's informal economy. The large-scale retrenchment of labour as the overriding consequence of (SAP) coupled with the inability to provide employment for the emerging labour force created a large pool of unemployed people who naturally gravitated towards employment opportunities in Ghana's informal economy. Osei-Boateng and Ampratwum (2011) also add that the inability of the formal private economy to provide jobs in their required numbers lead many Ghanaians to be pushed into the informal economy. For this reason, Ghana's formal economy lost ground in terms of its share of total employment because Ghana's Government continued to maintain a net hiring freeze policy in the public formal economy. This led to the private formal economy firms to close or switch to importation due to unfair competition from foreign companies. In the absence of appropriate social protection mechanisms (namely, unemployment benefits) informal activities became survival strategies for many Ghanaians; both old and young. This suggests that the informal economy at this point in time became the survival sector for Ghanaians.

During Ghana's economic decline between 1970 and 1982, the informal economy played a significant role in urban centres. Ghana's economic decline impacted on the majority of the urban labour force which resulted in their involvement in one kind of informal activity; either part time or full time (Yankson, 1992 cited in Barwa, 1995). These survival strategies were adopted in Ghana to help solve the consequences of the deteriorating economic conditions and, since then, the informal economy has remained the single most important source of employment in Ghana (Barwa, 1995). It should be noted that this period of Ghana's economic decline was the time that Hart (1970) conducted his empirical studies among urban migrants in Ghana. This, therefore, would explain his conceptualisation of the informal economy; however, as discussed earlier, over the years, the nature of urban informal activities has since changed.

[50]Ghana Statistical Service (2013a).

The informal economy is also attributed to the coming of Europeans and colonialism which changed the working arrangement of the country which resulted in peasants migrating to the cities in search of jobs. Previously land was tilled for production which was used by the household and only a little of the harvest was reserved for exchange. With the arrival of the Europeans and colonialism, these arrangements changed. The Europeans high demand for cocoa resulted in the commercialization of land. Families that could till or cultivate more land were able to get more cash from the sale of cocoa. In turn, such families expanded their farms by using the services of hired labour. This led to the widespread of new cash economy and this lured traditional authorities to sell more lands to strangers and natives alike in order to make more money. People with more money could purchase land and make more money through sale of cocoa. Money was therefore lend at high interest rates setting in motion tendencies for those who defaulted or unable to pay to be pushed off their land or to abandon their land and migrate to cities. However not all migrants were originally engaged in cocoa farming. Migrants from three regions (.i.e. Northern, Volta, and Upper regions) were more typically engaged in subsistence farming, focusing on food production. Nonetheless, they suffered similar pressures. The state offered more support to the production of cash crops (for export) and the industries that were set up mainly required cash crops as raw materials. These tendencies led to a rise in the demand for land for cash crop farming and a fall in the demand for land for traditional food crop production. In turn, peasants were forced to migrate to cities (Obeng-Odoom, 2011).

The migration factor leading to the expansion of Ghana's informal economy is also influence by the perception of people in the rural areas perceiving life in the urban areas or cities to be more attractive. This perception was strengthened by the disproportionate investment in cities over time. Economic liberalization made it possible for investment to be poured into already "developed" parts of cities like Accra (Benjamin, 2007). In 2004, for example, Greater Accra alone was home to about 79 percent of the 1,282 investment projects registered by the Ghana Investment Promotion Centre. The municipal, metropolitan and national state authorities were more interested in promoting private sector investment and disinterest in creating more public sector jobs. All these investment projects were concentrated in the cities. These factors lubricated the migration of people to cities in search of jobs cities (Obeng-Odoom, 2011). However many could not find jobs opportunities in the formal economy as they expected owing to intense competition, low educational levels among other factors, therefore has to

use their own ingenuity to earn a living, resulting in the swelling up of the informal economy.

For all these aforementioned reasons, Ghana's informal economy increased rapidly in the 1990s. Reports have shown that over 90 percent of employment opportunities in Ghana were in the form of informal activities (Chen et al., 2005) and the informal economy was the largest employer, because it provided employment for 80 percent men and 95 percent women in Ghana (Dejene, 2008). The private sector was the largest employer in Ghana, accounting for 93 percent of the economically active persons (private informal, 86.1% and private formal, 7.0%) and women constituted about 90 percent of the private informal economy [51] of which half was found in the private urban informal economy.[52] The public formal economy, which was the second largest employer, accounted for only 6 percent (2010 PHC) of the population. It was noted that women predominated in the private informal economy (90.9%) as against men (81%), whereas men predominated in the private formal economy (9.9%) compared with women (4.2%).[53]

2.4.3.3 Ghana's informal economy: a brief conceptual analysis

Obeng-Odoom (2011) argues that the reasons for the rapid growth of Ghana's informal economy are highly debated. This is based upon the principal polarized positions of so-called dualists and structuralists theorization. As noted early on, the dualist argues that the informal economy arises during periods of economic slowdown. That is, with poor economic growth people are likely to work in the informal economy and then exit it during high growth periods. On the other hand, the structuralists share the view that informal work is an integral part of the capitalist society as the informal economy aids economic growth and supports the livelihood of its workers. Contrary to the view by dualists, structuralists therefore argue that economic growth within a capitalist society causes the informal economy to expand because that economy provides cheap labour and other resources or raw materials for the accumulation of capital in the formal economy (Mensah, 2006; Potts, 2007). As mentioned previously the structuralists' conception of the informal economy better explains the Ghanaian case. This is because Ghana's informal economy has its roots in rural capitalism and owes its expansion to neoliberalism. Many of those who were pushed out or attracted to

[51]Ghana Statistical Service (2012).
[52]Ghana Statistical Service (2008).
[53]Ghana Statistical Service (2012).

the cities could not find jobs in the formal economy and in order to survive performed useful but poorly paid services to those in the formal economy (Obeng-Odoom, 2011).

The informal economy therefore swelled during the 1980s when, as part of the Economic Reform Program (ERP) in Ghana, the public sector was downsized and the public service began to be managed along private sector lines emphasizing efficiency and cost recovery. This New Public Management (NPM), as these policies were collectively called led to a dramatic reduction in the share of public sector employment. For instance according to Baah-Boateng (2004) between 1985 and 1991, Ghana's formal economy employment reduced at an average annual rate of 3.7 percent (Obeng-Odoom, 2011). Adu- Amankwa (2007) points out that between 1987 and 2000, more than 300 state enterprises were sold, resulting in a reduction in formal economy employment from 18 percent in 1989 to 13 percent in 1999. This led to about 70,000 people to lose their jobs in the formal economy. Others were also redeployed to other sectors of the public service and lost, as a result, about 27–48 percent of their initial income, depending on whether they were entitled to the payment of severance package (Alderman, Canagarajah, & Younger, 1995). Employees who lost their jobs for example in 1987 constituted 31.7 percent of women (The Statesman, 2007).

Obeng-Odoom (2011) also points out that only a small proportion of those people who lost their jobs found work in the private formal economy; most of them did not, so they had to work in the informal economy. As a result, many people who hitherto were decently employed were forced into the burgeoning informal economy where they made a living by starting to hawk various goods like dog chains, water, and foodstuff (Obeng-Odoom, 2011). This suggests that many people with their own ingenuity started their own businesses particularly in micro-trade. This led to the rapid growth of informal MSEs in the form of sole proprietorships in the Ghanaian informal economy. The involvement of many people in micro-trade activities reflects the interconnection between the formal economy and informal economy as they for instance market the goods from the formal economy.

This preceding discussion suggests that, although the Dualist explanation does help in explaining how some people in the informal economy "filter up" the employment ladder, the permanence of the economy shows that the Structuralist view better explains the rise and nature of the informal economy in Ghana. This is because many people in the informal economy carry out indispensable tasks to keep the wheels of urban economic growth turning

through the provision of food, labour, and market for activities in the more formal economy of the city economy (Obeng-Odoom, 2011). I concede with Obeng-Odoom assertion and therefore believe the structuralists view can be used to conceptualised the Ghanaian urban informal economy considering the heterogeneous nature of activities and people (as discussed earlier), it rapid growth as many people work for their livelihoods through their micro activities to enable the economic sector to play it role. Such indispensable micro-activities involved in by these people in the informal economy reflect the interconnections and complementary links between the formal and informal economy.

Ghana's informal economy has therefore received increasing attention in the development discourse of Ghana since the middle of the 1980s and the beginning of the 1990s. This is because it is the largest employer and it had not only persisted since independence; but has also been dramatically expanding and contributing significantly to the economic growth of the economy. For instance the Minister of Employment and Social Welfare revealed that the informal economy contributes about 40 percent of national income in Ghana (Ghana News Agency, 2010). It has therefore been the target of some policy initiatives and activities by certain governmental and non-governmental institutions and organisations, including the trade unions. Ghana's informal economy receiving attention suggests that the significant role of its workers and their activities.

2.5 Ghanaian women and the informal economy

In Ghana women play a significant role within the family, community and the society at large. Their role is not limited to the home and family but they are found in all sectors of the economy with their impact felt more in the agricultural sector (in rural areas) and services specifically wholesale and retail trade (in urban areas). As also noted earlier the low educational and literacy levels for women (among other factors) contribute to the concentration of women in informal private sector employment and self- employment in the informal economy. For this reason a higher proportion of women in Ghana are employed in the less secure sectors and predominate in the Ghanaian markets (in urban areas in particular). A focus on micro- trade is thus justified to discuss the role and the power relations of women in the Ghanaian economy. Also given the focus and objective of the study, the discussion on the role and power of women in the informal economy is justified.

For these aforementioned reasons, in the subsequent sections Ghanaian women and their role in the informal economy with much emphasis on micro-trade will be discussed.

2.5.1 Ghanaian women and informal micro-trade

As mentioned earlier, over 50 percent of the economically active population in Ghana are women and they are found in all sectors of the economy. Thus, the engagement of women in economic activities in Ghana is widespread, ranging from the formal to the informal economy. Women account for approximately 48.85% of the labour force and are found in almost all kinds of economic activities including fishing, farming, as well as in industry such as manufacturing and services, especially wholesale and retail trade while other women are also found in administrative and managerial jobs. However the majority of women is found in the lower echelons of economic activity with most of their activities in the informal economy. The informal economy thus serves as a large source of income for women (Amu, 2005).

Ghana's informal economy is characterised largely by self-employment with the majority of workers self-employed without employees. It is noted here that the majority of women (69.4%) in this segment are self-employed; however, self-employment without employees predominates (65%) among women compared with the self -employed with employees (4.2%).[54] The higher proportion of women in self-employment (averagely 76.43%) therefore implies a lower participation rate in wage employment, even though the proportion of female formal employees doubled from 4.2% in 1960 to 8.7% in 2000 and increased to 11.4% in 2010 (Ghana Statistical Service, 2013**a**). This obviously shows that self-employed women on the labour market in Ghana outnumber their counterparts in the formal employment.

In recent times, Ghana's informal economy has comprised mostly of MSEs. MSEs tend to serve as a main source of income for women in Ghana and play an essential role for Ghana which is promoting economic policies aimed at poverty reduction (Awo, 2012). Amu (2005) points out that the majority of self-employed women in Ghana operate MSEs, the majority (70%) of which are sole proprietorships. According to Dejene (2008) a study by Human Development Department in Ghana (in 2007) also opined that about 68 percent of female-owned MSEs were sole proprietorships.

[54]Ghana Statistical Service (2012).

Sole proprietorships as a form of self-employment in Ghana serve as job opportunities for the many including the marginalised particularly for women who fall into this category. Wrigley-Asante (2008) argues that women are marginalised much more than their male counterparts in Ghana because of gender inequalities in access to: (i) ownership of and control over resources as a result of the Ghanaian economy predominantly patriarchal system[55] (which tends to favour men in terms of authority and control of property);[56] (ii) the increase of women's involvement in low urban informal economy activities generated by the 1980s crises; (iii) the structural adjustment programmes implemented; and (iv) the increasing number of female heads of households as they become sole or take up the breadwinners role of their households. For instance, in 1984, about 31 percent of Ghanaian houses were headed by women, and by the year 2010, the numbers increased to 35 percent;[57] however, the incidence of female-headed households was higher in the urban areas (Baden et al., 1994). This was because 33 percent of households in the urban areas were headed by women (Brown, 1994) and in 2010 female- headed households in the urban areas increased to nearly 36 percent. For instance, in Accra, 18 percent of households were headed by women.[58] This suggests that more and more women are becoming the backbone of their families as breadwinners (particularly in urban areas) and their economic independence is important to the existence of their households. It is against this background that 75 percent of households in Ghana depend on women's MSEs, in the form of sole proprietorships, to earn a living (Amu, 2005; Boohene et al; 2008).

Kabeer (2011) argues that with the earning of income by these women, men in some cases have accepted and welcomed these women sharing the breadwinner role. Informal economy in the form of self-employment therefore forms such an important source of economic opportunity for women. For women in particular, the obligation to make up for household food shortfalls and to ensure that children are fed, clothed and healthy constitutes an important motivation for them to engage in various productive activities independently of the household. This shows the significant role Ghanaian women play in catering for their children and families by providing them with household supplies. Women marginalised due

[55]Matrilineal system is also existence in Ghana and predominantly practiced by the Akans (found in Ashanti region of Ghana).

[56] The type of economic activities Ghanaian women tend to be involved in (among other factors) is to some extent shaped by the male-biased allocation of traditional entitlements and modern assets, a relic of neo-patriarchal ideologies of gender relations found in both patrilineal and matrilineal kinship systems in all parts of the country (Madah, 1999).

[57]Ghana Statistical Service (2012).

[58]Ghana Statistical Service (2012).

to the practices of the patriarchal system or their low educational levels did not sit down to depend on men (or their husbands in the case of the married). These women through hard work got involved in economic (informal) activities to sustain their families indicating a woman is able. These women though sometimes marginalised are determined to play a significant role in their households thus gaining recognition in the Ghanaian economy. This significant role of Ghanaian women in the informal economy corresponds with the argument of Portes (1983:152) that the marginalised is not simply "there", as an inert mass excluded from participation in modern society. In other words, we have the image of a dynamic class of people engaged in myriad activities that, if not highly remunerative, at least provide for their own subsistence and their children's. This therefore suggests that women have an economic presence in the Ghanaian informal economy.

Sole proprietorship in Ghana as mentioned earlier occurs mainly in non-farming enterprises or non-agricultural activities (Boohene et al; 2008) with the majority of these enterprises (70%) operated by women.[59] Most of these female sole-proprietor enterprises are in the form of trade (Dzisi et al., 2008), and trade forms the largest sector of non-agricultural activities (46%) accounting for almost half of the Ghana's working population and more than half of the female working population (53%) (Budlender, 2011). Trade is considered as the dominant enterprise within Ghana's non-agricultural activities and women also predominate in them. It was reported that 91 percent of self-employed women in Ghana were found in the trading sector, mainly in petty trading (Baden et al., 1994), and market trade forms the main occupation of self-employed women (Overa, 2007, Awo, 2012). Dunne & King (2003) and Robertson (1984) argue that market trade has been referred to as informal activity. This is because after Ghana's independence (1957), development became associated with a capitalist mode of production in formally established industries. In this context other forms of production that did not add to the Gross National Product (GNP) were not considered economically viable and as such were regarded as informal activity. However it has been argued that in Ghana it is difficult to distinguish between formal and informal activities as most self-employment opportunities take place at the formal and informal interface. Activities such as market trade exemplify this argument, as unregistered traders in market place are sometimes asked to pay tolls (tax) or city officials attempt to collect levies from these unregistered enterprises (Overå, 2007) and even registered enterprises in markets place are able to evade these officials during levies collection. However market activities are to a

[59]Ghana Statistical Service (2008).

large extent considered informal because predominantly they involve self- employment, operate under flexible conditions and there is relatively lack of intense of government regulation and control over business activities.

Trade has also been noted to have had the highest proportion (31%) of employment in urban centres (Ghana Statistical Service, 2008). In Ghana's urban areas, market trade constituted the major source of employment for the majority of women (Dunne & King, 2003) with about 78 per cent involvement. The Ghana Living Standard Survey Report 5th round (GLSS 5) shows that Accra has about 60 percent of its enterprises in trade; and that almost half were female sole proprietor enterprises (49%) with about 42 percent of these traders operating in the urban centres.[60] Market trade then also serves as an important source of employment for the majority of urban women in Ghana.

In Accra and Ghana women predominate in market trade and a trading business is often passed from one generation to another. Female children[61] are the ones who often inherit the trading activities from their parents. The daughters of market traders are therefore socialised into market trade at a young age to attain the prerequisite abilities and skills to take over their mother's business when they grow up (Eade, 1993; Robertson, 1995; Dunne & King, 2003) what Grieco et al. (1996) refer to as "occupational socialisation"(i.e. market trading career influenced by families due to being socialised. The numbers of women in market trade in Accra has therefore increased over the years with most of the women involved in trade for quite a considerable number of years.

2.5.2 Ghanaian women predominance in informal micro/market trade

Numerous reasons have been given for the predominance of women in Ghana's market trade. Both Brown (1994), and Owusu & Lund (2004) have opined that the implementation of SAPs in Ghana in the mid-1980s resulted in: (i) an increase in prices of basic needs; (ii) a rise in unemployment and underemployment of male partners; (iii) a decline in real income; and (iv) the growth in need, in both rural and urban settings, to meet local levies for social amenities and provision through user charges. These factors have caused women to supplement or become the sole providers of household incomes. This consideration was affirmed by Owusu and Lund (2004) who argue that the effects generated by SAPs made it imperative for women

[60]Ghana Statistical Service (2008).
[61]Nieces and other relatives are also socialized to inherit the trading activities of their family.

to create supportive incomes for their households and made their income-generating activities indispensable to the sustenance of their families.

Another consideration made by both Overå, (2007) and Robertson (1995) was that the economic crisis created by SAPs resulted in many people losing their jobs as employment opportunities in the formal economy dwindled. This led many people to seek employment opportunities in the urban informal economy. The educational disparities in Ghana, as noted earlier, contributed at that time to the concentration of women in trade since it was seen as the only occupation for most women who had little or no education or who had lost their jobs during these economic crises. With no option other than to involve themselves in trade this then contributed to the predominance of women in trade activities. Robertson (1984), Dunne & King (2003) and Amu (2005) support this argument by documenting that low or lack of education contributed to the predominance of women in market trade.

In Ghana education among other factors (as noted earlier) contributes to the high rate of gender-disparity. Berry (1994) argues that for women of little or no education who lived in urban centres, trade was the most common form of economic activity in the 1980s. At urban market centres throughout the country, women from the rural areas brought their goods to trade. Other women specialized in buying agricultural produce at discounted prices at the rural farms and selling it to retailers in the city. These economic activities were crucial in sustaining the general urban population. From the mid-1970s through the early 1980s, however, urban market women, especially those who specialized in trading manufactured goods, gained reputations for manipulating market conditions and were accused of exacerbating the country's already difficult economic situation. With the introduction of the Economic Recovery Program in 1983 and the consequent successes reported throughout that decade, these accusations began to subside.

Hampel-Milagrosa (2009) also points out that lack of formal job opportunities also makes it difficult for those with university education (and even professionals) particularly women to find work to earn a living. This also explains why many women established their own enterprises leading to majority of women as MSEs owners. This suggests that the Ghanaian informal economy do not comprise only illiterates or unskilled workers. This contrasts with the conceptualisation of some scholars (Dasgupta, 1973; Swaminathan, 1991) that the informal economy comprises only illiterates and a lack of skilled workers in certain areas. However, Yussuf (2011) argues that in African countries, the informal economy is

increasingly composed of members of the middle class, who have greater access to capital and skills to exploit the more profitable opportunities which have been created by the structural adjustment policy (SAP) crisis and deregulation. Severe wage restraints and high rates of retrenchment in the public and private sectors have significantly increased the numbers of open and disguised unemployment. In the process, the composition of the unemployed has changed since a growing cadre of unemployed graduates and professionals has begun to swell the informal economy statistics. This situation is no different to Ghana; as many graduates and professionals, who lack job opportunities in the formal economy, are involved in finding jobs in the informal economy[62]. This shows a reflection of the heterogeneous nature of the informal economy in Ghana.

Hampel-Milagrosa (2009) also notes that another reason that account for majority of women not employed in the formal economy in Ghana is due to Ghana's labour laws which required employers to shoulder the cost of maternity leave, such cost hinders women opportunity in seeking employment opportunities in the formal economy. It is therefore argued that the informal economy has been seen to provide a form of income in situations where standard employment practices and entrepreneurial activities often leave the individuals (particularly women) in need of an alternative source of income (Chair, 2014).

Amu (2005) also associates the predominance of women in trade with two factors which made it easier for them to get involved: (i) the low to moderate capital that is needed to start such activities and (ii) the relative ease with which trading can be conducted. In addition, the Ghana Statistical Service (2008) notes that due to low or moderate capital needed to commence trade, women could easily, through their household savings or assistance from relatives and friends, raise some capital to get involved in micro trade.

Owusu & Lund (2004) further argue that the feminine nurturing factor could be attributed to women's predominance because they are assumed to have been endowed with supportive roles and meet these expectations by providing food and basic needs for the household. A similar factor is the flexibility of trading which allows women to cater for their children (as babies) – something that is constrained and challenging to handle when employed in the

[62]One case point is the emergence of a large informal economy with women predominating in market trade and men predominating in the establishment of informal sole proprietorship businesses involving in mobile handsets and the associated services trade.

formal economy. Robertson (1984) supports the notion that trading enables women to fulfil their widely recognised obligations to feed their families while giving them a much needed source of income. This observation by Owusu and Lund (2004) augments Yu (2012) argument that the informal economy is relevant as it enables individuals to supplement their income or provides individuals an opportunity where they can balance their work and life compared to being in the formal economy. Ghanaian women working in the informal economy are therefore able to balance their work and life as well as supplement incomes of their husbands or become the sole financial backbone of their families. Such nature of employment being flexible and easy to control one's own activities as well as to enable them accommodate their household responsibility shows the important and significant contribution the informal economy makes in providing women job opportunities to make their life at least easier. This is because among other factors (e.g. low education level and SAP crisis) women's biological and cultural role of bearing children and catering for them to some extent tend to hinder them to involve in certain employment opportunities particularly formal employment opportunities.

In addition, the female predominance in trade has been attributed to being essentially based on the desire of women for economic autonomy (Owusu & Lund, 2004) and also as a result of the increasing number of women as heads of households in Ghana (Robertson, 1995). In Ghana men losing their jobs as a result of the SAP crisis or not earning enough income to cater for their family tend to shift the responsibility of taking care of the family (financially) especially children into the hands of women (particularly in the urban areas). This reflects the increasing of women headed households in urban areas in Ghana and this has led to some women (the married) in the urban areas referring to men or husbands who are not able to cater for their family as the "living dead)[63]. This implies that women who become financially empowered in this way tend to gain autonomy and voice to make decisions of their own. The predominance of women in market trade is no doubt a glaring example of women's independent role as these women are shouldering the familial responsibility as the main breadwinner of their family. This appears to be changing the pre-held traditional trend in Ghana of men being previously responsible for the financial upkeep of their families and households.

[63]This means a man is not able to sufficiently provide financially for his family and household. In this situation, to the woman the husband's absence in relation to lack of contribution or in providing financially for the family makes him 'dead' though he is living.

The predominance of women in market trade has been referred to as "feminisation of the market place" (Overå, 1998) as they predominate and control the affairs in majority of markets in Ghana. This is exemplified in the leadership positions or roles as queen mothers. Such predominance shows the power dynamics they have in the markets against their male counterparts irrespective of Ghana's predominantly patrilineal system which gives men more authority and control. The market in Ghana tends to be the domain of women and it becomes the arena where women assert their power as they engage in sales and distribution of goods to ensure the goods get to the final consumer. Ghanaian markets therefore appear not to be an example of "feminisation of survival" (Sassen, 2001). Women predominance in Ghana's trading business has certainly shown the significant role women play in the urban informal economy and economic development. This suggests that female involvement in market trade is essential because they serve as sole promoters of goods produced and they ensure that goods reach the final consumer.

From the above discussions women's decision to work are likely to reflect different degrees of choice and constraint, depending not only on individual decision and household characteristics such as education, wealth etc; but also determined by the acceptability of work within the local culture as well as the amount and kinds of work available. Heintz and Pickbourn (2012) argue that involving in the informal activities can also be understood as outcome of choices made in the context of structural constraints outside the labour market. Such constrain include – distribution of assets, access to credit, education, gender, and social norms of household provisioning etc.

For Kabeer (2012) the decision to work and the category of work is the result of active choice on the part of women suggesting the empowerment of women. Therefore not all self-employed activities by women are distress driven and characterised by high levels of exploitation. In other words, not all female self - employment fall into the 'vulnerable work' category. Kabeer (2012) continues to argue that if self- employment is perceived of in terms of a continuum, with survival-oriented income generation at one end and accumulation-oriented enterprise at the other, majority of self employed women will be located closer to the survival end but would find that some of them, varying percentages in different regions would be found closer to the other end. This situation is no different in Ghana as some of the self-employed women involve in informal self - employment activities in order to earn a living whereas others involve in order for accumulated oriented enterprises, for instance

market women. Though, to majority of the traders, the profits earned from their trade are not substantial to guarantee a better standard of living, they are able to augment their households' total income from the profits made. The income earned has led to the majority of urban women traders[64] to become breadwinners and heads of households.

Greenstreet (2003) argues that some of these urban market women have become comparatively rich and have shown considerable business acumen and some have also shown important business responsibilities dealing in local products or imports.[65] Some even run prosperous concerns and have gone to the extent of investing their profits in real estates. Thus market trading in Ghana and especially in Accra gives the impression of being important both economically and socially. This is evident in recent times as Accra market women have organised themselves in to associations under the Greater Accra Market Association, with some of the executives (i.e. queen mothers) holding influential positions in dynamic women groups or in political parties. This argument contrast the claim of Kabeer et al. (2013) that women in the informal economy are structurally disadvantage and are found in invisible margins of the urban economy.

Ghana's women traders therefore are contributing significantly to Ghana's economic development as they play their role through their micro-trading activities. Most of the goods produced in the formal economy are predominantly marketed by these urban market women showing their significant connection with the informal economy. A reflection of one of the reasons why I believe the informal economy of Ghana can be best situated in the structuralists theorisation of informal economy.

2.6 Conclusion

This chapter examined how the term 'informal economy originated from a study in urban Ghana and its entry into development literature, leading to volumes of debate and diverse conceptualisations and approaches. I then focus on structuralist's approach to the informal economy and highlighted the interconnections and complementary links of the formal and informal economy. Focus was also placed on Hart's rethinking of the term to show the relevance of the use of the term in the study. The chapter also examined Ghana's informal economy and this was done by giving a background on the social structure of Ghana and its

[64]Especially those at the top of the trading hierarchy in Ghana, that is, wholesalers and retailers who are viewed to be of higher social standing.

[65]This explains why in Ghanaian market all kinds of goods can be bought from the local to foreign goods.

capital Accra in order to give a better view of Ghana's gender dimensions of employment and work activities. Ghana's informal economy owing to its origin, heterogeneous nature among other factors was discussed to highlight why it was best conceptualised using the structuralists view. The chapter concluded with a discussion on women and the reasons for their predominance in informal micro-trade (market trade) through their socio-economic position in the Ghanaian informal economy.

Informal micro trade activities have been noted to have been impacted by the introduction of mobile phones. This study main focus is assessing the effects of mobile phones on informal micro trade in Accra through to examination of the differences in access and use of mobile phones among women traders. In exploring this study question one needs to assess and have a broad knowledge of mobile phones and their social significance as well as how they enter into trading markets in African countries and more specifically the Ghanaian economy. The next chapter will, therefore, discuss the development of mobile phones over the years and highlight their roles in informal micro-activities.

CHAPTER THREE
THE SOCIAL SIGNIFICANCE OF MOBILE PHONES IN AFRICA AND GHANA

3.1 Introduction

Today, mobile phones are playing a significant role in the lives of people and in global society. Mobile phones, initially an élitist device owned by top male businessmen, have reached all social and demographic groups on the account of the 'wireless' (cellular) communication technology explosion that began in 2000 (Roos, 1993; Lacohee et al., 2003; Dunn & Dunn, 2006). Compared to the internet and personal computers, its rapid adoption globally has surpassed any other technology (Ling & Donner, 2009). As argued by Kalba, "mobile phones are spreading ubiquitously across the planet and are even the latest phase of globalisation [...] mobile phones have out diffused virtually every prior technology, whether TV sets, radio, wrist watches, wallets, wired line phones, or bicycles...." (Kalba, 2008: 632). Comer and Wikle (2008) affirm that the rate at which mobile phones have been embraced has become the most widely adopted information and communication technology in history. The rapid adoption of mobile phones has led to a number of studies (Overá, 2006; Molony, 2009; Boateng, 2010; Essegbey & Frempong, 2011) on the use, significance and effect of mobile phones in economic development.

This chapter explores the literature on mobile phones and examines the reasons that have been given to account for mobile phone growth, particularly in Africa. More specifically, the telecommunication sector of Ghana will be discussed with an emphasis on the mobile phone industry. In this chapter, the rapid development of mobile phones over the years will be explored in an attempt to examine their uses and services they offer. By assessing on the suggested model of the effect of mobile phones on micro-trading by Boateng (2010, & 2011), an attempt will also be made to discuss mobile phones and their effect on socio-economic development. This chapter will end with a discussion on differences in the access and quality of use–digital equality–with a focus on the suggested dimensions of digital inequality by DiMaggio and Hargittai (2001).

3.2 Mobile phone growth in Africa

Since the first mobile phone call in Africa was made in Zaire in 1987 on the so-called 'magical device', or 'miraculous technology', mobile phones are believed to have become the fastest- growing communication technology on the continent of Africa (Vodafone, 2005; The

Economist, 2005, in Kumar & Thomas, 2006). They have been hailed as the answer to improving telecommunication access in Africa (Kelly et al., 2002, cited in Castells et al., 2007). In light of this assertion, Etzo and Collender argue that 'only superlatives seem appropriate to describe the mobile phone 'revolution'– its impact and its potential in –Africa' (Etzo & Collender, 2010:659).

Etzo & Collender (2010) point out that almost 90 percent of all telephone subscribers in Africa are mobile subscribers. It was estimated that in 2001, only 3 percent of Africans owned mobile phones which then accounted for 53 percent of all telecommunication subscribers on the continent (Lacohee et al., 2003). According to the International Telecommunication Union (ITU, 2014) Africa is experiencing the fastest mobile phone growth rate in the world and would be expected to attain an estimated growth rate of 69 percent by the end of 2014. This rapid growth rate has led a business news report (*Mail and Guardian*, 2012) to estimate that mobile phone subscribers in Africa would reach one billion by 2015.

Several reasons have been attributed to the rapid growth of mobile phones in Africa. Firstly, it has been argued that the high mobile phone growth rate in Africa is a result of Africa liberalising its telecommunication sector in the late 1990s and early 2000s, which led to the easy introduction of mobile phones into its economy (Meso et al., 2005; Castells et al., 2007; De Bruijn et al., 2009; Etzo & Collender, 2010).

Secondly, it has also been observed that, compared to other technologies, mobile phones are more user-friendly. They are simple to use because no special technical skills (digital literacy) or training are needed to operate them (Esselaar et al., 2007; Botelho & Alves, 2007; Comer & Wikle, 2008; James, 2011; Hinson, 2011).

Thirdly, it has been pointed out that there is a widespread use of mobile phones in Africa because their usage is not inhibited by illiteracy and lack of electricity (Kellerman, 2006; Botelho & Alves, 2007; Comer & Wikle, 2008).

Fourthly, the relatively affordable, portable and multifunctional nature of mobile phones also goes some way to explain their popularity and rapid growth (De Bruijn et al., 2009; Etzo & Collender, 2010).

Fifthly, the problem of the poor and unreliable nature of roads, postal services and fixed telephone landlines, which tend to be both expensive and scarce in Africa, has been solved by

the substitution of mobile phones (Lacohee et al., 2003; Vodafone, 2005; Castells et al., 2007; Comer & Wikle, 2008; Donner & Escobari, 2009; Aker & Mbiti, 2010; James, 2011).

Finally, in terms of cost, the alternative mobile phone pay-as-you-go system (prepaid subscription) does not require large monthly payments (Lacohee et al., 2003; James & Versteeg, 2007). Furthermore, a price drop in the cost of handsets has also made it more available to all - even the poor (Castells et al., 2007; Hahn & Kibora, 2008; Ling & Donner, 2009; James, 2011; Hinson, 2011).

In this context, mobile phones serve as the first opportunity for many users to engage in digital telecommunication in Africa. Several researchers (Steinmueller, 2001; James, 2002; Hahn & Kibora, 2008; Comer & Wikle, 2008) refer to this first opportunity to join the digital revolution as "leapfrogging"[66]. Aoyama (2003) and Hahn & Kibora (2008) affirm that this is commonly associated with less developed countries, particularly those with relatively small number of landline telephones or that lack fixed-landline infrastructure. Smith (2014) therefore contends that the "mobile has allowed anyone to have a phone in places that were previously [inaccessible] and uncontactable ..... It really is that technology leapfrog the industry likes to talk about". It has therefore been pointed out that Africa is experiencing leapfrogging due to mobile phones substituting unreliable or non-existent fixed telephone landlines (Madden & Coble-Neal, 2004; Vodafone, 2005; Waverman et al., 2005). This has therefore created the opportunity for many mobile phone users to join the digital revolution or age for the first time.

The availability and low cost of mobile phones in developing countries in Africa have led some scholars to claim that they are likely to 'bridge or close' the global divide (Snowden, 2000; Mbarika, 2002; Kenny, 2002; Wade, 2004; Donner, 2008). Even though mobile phones have penetrated Africa at a staggering rate and become a substitute for fixed landlines, there exists a rural-urban divide, because they remain urban centric and cannot completely replace fixed lines in rural areas of Africa (Botelho & Alves, 2007; Hahn & Kibora, 2008).

[66]Leapfrogging is "bypassing stages in capacity building or investment through which countries were previously required to pass' (Steinmueller, 2001:94).

James and Versteeg (2007) have, however, cautioned that irrespective of the high penetration rate of mobile phones in Africa, their importance is unknown because the data available on mobile phone subscriptions per hundred inhabitants in Africa have also been equated to users. Owing to a culture of sharing in African communities, these researchers have reasoned that consequently there could be an underestimation of mobile phone users in a market survey because in Africa, one can subscribe to mobile services without necessarily having a mobile handset as mobile phones are sometimes shared. In other words, one can purchase a prepaid SIM card without necessarily owning a mobile handset. Also one can have many SIM cards to use for one mobile handset or access mobile services without owning a mobile handset. This is one reason why pre-paid subscription (namely, services that do not require monthly payment since payment is dependent on usage) is a main feature of mobile subscribers in Africa (James & Versteeg, 2007).

This situation is no different from that in Ghana with regard to mobile phone sharing and the purchase of prepaid SIM cards with or without a mobile handset. Subsequently the data on mobile phone growth rates and subscriptions might provide little information on the reality of their importance in Ghana. Certainly, in terms of development, for example, such data might not be enough for one to make claims and appreciate the importance and effects of mobile phones. However, it is argued here, that if one is interested in the effects of mobile phones on socio-economic development, the focus should be on their actual use as the effect of mobile phones goes beyond the number of subscriptions. Usage data will, therefore, tend to give the accurate picture of the importance of mobile phones in Africa and will bridge the digital divide that tends to separate Sub-Saharan African countries from the technological development countries (Vodafone, 2005; James & Versteeg, 2007). It follows that an assessment of the growing effects of mobile phones should not only focus on adoption but also on the use of the technology because all information about the purchase of goods (mobile phones) in itself, tells one nothing about how they are actually used (James, 2013). It therefore becomes necessary to explore mobile phone usage and their effects to appreciate their contribution to development.

This study, therefore, becomes relevant because it aims to explore the usage pattern of mobile phones and their effect on socio-economic development by focusing on informal women traders in Accra, Ghana. In achieving this research goal and considering the study focus, one needs to understand the telecommunication industry of Ghana, the gender disparity of mobile

phone ownership and the usage pattern among Ghanaians. There is also the need to be informed about the ownership of other ICTs as against mobile phones and how the impressive penetration of mobile phones has contributed to Ghana's economy. These will therefore be discussed in the subsequent sections to unfold mobile phones role in the Ghanaian economy.

3.3 Ghana's telecommunication industry

The introduction of fixed landlines in 1890 by the British colonial government marked the transformation of communication dynamics in Ghana. Consequently, fixed telephone landlines transformed communication patterns from the use of gongs, drums, letter-post, *inter alia*, to the involvement of communication via electronic media. In 1937, the access to fixed telephone landlines was through the post office and service industries. But by the mid-1980s, fixed telephone landlines had reached the homes of individuals, in particular those of the rich, and were therefore regarded as status symbols. Over time, fixed telephone landlines became more widespread and reached more homes which resulted in a loss of their association exclusively with the rich. This loss of status for fixed telephone landlines is also attributed to the introduction of public pay-phones or phone booths, in early 1990s, to complement and substitute fixed telephone landlines in Ghana (Ayensu, 2003).

However, irrespective of the fact that fixed telephone landlines had reached many homes in Ghana, they proved unreliable. Therefore, in 1996, in a bid to improve their reliability, Ghana Telecom, the country's main telephone operator, was partially privatised with Telecom Malaysia acquiring a thirty percent share (Haggarty et al., 2003). However, fixed telephone landlines reliability remained a problem. The Government of Ghana later abrogated the contract from Telecom Malaysia and signed a new contract with Telenor of Norway to improve the landline system (General News, 2003). Inadvertently, however, Telenor Norway was unable to commence operations and this resulted in a long waiting list for areas that were not yet wired and an increase in the unreliability of fixed telephone landlines in Ghana.

Upon recognising the importance of telecommunications in socio-economic development, the Government of Ghana then liberalised its telecommunication sector in early 1990s to provide consumers with better, new and less costly telecom services (Frempong, 1996; Nyarko & Quartey, 2009; Dziwornu, 2013). The liberalization was done by introducing a five-year Accelerated Development Programme (ADP) in 1994, with the aim of increasing telephone

coverage in the country and to open up private participation and ownership of telecommunication companies (Frempong, 2007). Additionally, the ADP sought to ensure and sustain improvement in the availability, reliability and quality of communication services; expand employment opportunities; improve public access to telecom services in rural and urban areas; and to ensure that telecom tariffs were affordable, competitive and conferred economic returns on telecom operators (Osiakwan, 2003).

Further, to support the growth of the telecommunication sector in accordance with the global policy changes in the ICT industry, Ghana also reformed its ICT industry in the early 1990s and established the necessary legal and regulatory frameworks. In late 2003, the Information and Communication Technology for Development (ICT4D) policy was introduced with the intention to establish an ICT-led socio-economic development process that could transform the Ghanaian economy into a middle income, information rich, knowledge based and technology-driven economy (Haggarty et al., 2003; Frempong et al., 2005). The ICT4D policy was aimed at the development of the ICT sector and industry as well as to use ICT as a broad-based driver of developmental goals with emphasis on the development, deployment and exploitation of ICT as an engine for all sectors of the economy (Frempong, 2007).

3.3.1 Ghana's mobile telecommunication industry

Based on the liberalization, the ADP and reformation of Ghana's telecommunication sector in 1990s, Ghana once again witnessed a change in its communication dynamics between fixed telephone landlines and mobile phones. This was due to the proliferation of a number of private sector mobile network service providers in the country which paved the way for the presence of mobile phones in the country (Frempong & Atubra, 2001; Goni, 2011). Mobile phones were then introduced by the first mobile network provider, Millicom or (Mobitel) Ghana Limited, (a subsidiary of Millicom International), which began operations in 1992 under the brand name Mobitel, then Buzz which is now known as Tigo. In that year (1992) alone, 19 000 Ghanaians subscribed to mobile phone services (Ghana Web, 2003; Frempong et al; 2005).

Over the years, other mobile phone network providers have joined Tigo (Millicom Ghana Limited). In 1993, Kasapa Ghana Limited, previously known as Celltell, (formerly a joint venture between Kludjeson International and Hutchinson Whampoa of Hong Kong) then

Kasapa[67] but now rebranded as Expresso (in 2010) started operations. In 1996, Scancom Ghana Limited, the first digital cellular network under the brand name Spacefon, then Areeba and now known as MTN joined the country's mobile phone operations. In 2000, One Touch, a subsidiary of Ghana Telecom (now referred to as Vodafone since 2009) commenced operations. In 2008 Zain (since rebranded as Airtel in 2010) received a license to operate (Frempong et al., 2005; Accraexpat.com, 2014). More recently in 2010, a sixth mobile network provider, Globacom (a subsidiary of Globacom International) with its network referred to as Glo received its licence and commenced operations in April 2012 (Ghana News Agency, 2012**a**; Accraexpat.com, 2014). With the opening of Ghana's telecom sector and many mobile phone companies or operators entering the country, Addy-Nayo (n.d) documents in the 3G Mobile Policy Report that Ghana is becoming one of the most liberalized telecom markets in Africa.

The operations of the mobile phone network providers formally providing mobile internet based on Code Division Multiple Access (CDMA) by (Expresso), General Packet Radio Service (GPRS) and Enhanced Data rates for GSM[68] Evolution (EDGE) by MTN, Tigo, Vodafone and Airtel have all since migrated to the use of fibre optics for the provision of mobile-based internet. Globacom (Glo), the sixth and latest mobile network-provider, was the first to introduce an undersea fibre optics cable to provide mobile-based internet in the country. Before launching its operations in April 2012, Glo contracted Alcatel-Laurent of France, to install fibre optic cables that will carry data and internet traffic in the country and from the country to West Africa and the rest of the world (Ghana News Agency, 2012**a**)

After Glo landed Glo one, MTN landed West African Communication System (WACS) after which Expresso became the third individual operator to land a submarine fibre optic cable in Ghana. Expresso landed ACE (African Coast to Europe), a fibre optic cable system owned by a consortium of financiers consisting of 17 telecommunication operators including, inter alia, Benin telecom SA, Orange Bissau, Orange Spain, Orange Cameroon. In addition, Tigo, Airtel and Vodafone have since all begun operations with fibre optic networks (Balancing Act News, 2011; Benson, 2012; Dowuona, 2012; Ghana News Agency, 2012b; Adepoju, 2014). Ghana now has five submarine cables: SAT 3, Main one, Glo one, WACS and ACE (Ghana News Agency, 2011; Dowuona, 2012).

[67]Kasapa means 'good talk' in Twi, the most widely-spoken local language in Ghana.
[68]GSM, originally referred to as Groupe Spécial Mobile is now called the Global System for Mobile Communication.

In terms of coverage, five of the mobile phone operators cover the ten regions of the country and their services are available in more than 100 towns (Frempong et al., 2005). The newest network provider, Globacom referred to as Glo, launched in April 2012 already has coverage in eight regions of the country. It is also noted that all the mobile phone network providers have their national headquarters located in the urban centres, specifically in Accra.

As a result of the liberalization and privatisation of the telecommunication sector in Ghana, which led to an increase in the number of mobile phone network providers, there was the need to assign the regulatory roles to an independent body to oversee the development of the sector. The December 1996 Act (Act 524) created the National Communications Authority (NCA) which was empowered as the regulator authority of the telecommunication industry in the country (Haggarty et al., 2002; Frempong et al., 2005).

According to the NCA, in January 2014, the total number of mobile subscribers was 28 million. Six months later, as at June 2014, subscriber figures have increased to 29 million with MTN Ghana leading the mobile market share (46%), segment followed by Vodafone (23%), Tigo (14%) Airtel (12%) with Glo (5%) and Expresso (0.4%) at the tail end (NCA, 2014**a**, 2014**b**). As at December 2014, just another six months later, mobile subscriber figures have increased to 30,360,771 with MTN Ghana still leading the voice market share (46%) segment and Expresso still at the tail end (0.3%) (NCA, 2014**d**). The table below represents the various networks and their mobile voice subscriptions and data shares as at December 2014.

Table 3.1 **Voice subscription and data share of mobile phone operators in Ghana as at December 2014**

Network provider	Number of voice subscribers as at December 2014	Percentage of market share data as at December 2014
MTN	13,852, 398	50.64
Vodafone	7,069,516	18.15
Tigo	4, 133,760	13.27
Airtel	3,735,656	13.48
Glo	1, 450,382	4.23
Expresso	1,190, 59	0.24

Source: National Communication Authority (NCA) (2014**d**, 2014**e**).

3.3.2 The decline of other ICTs versus mobile phones

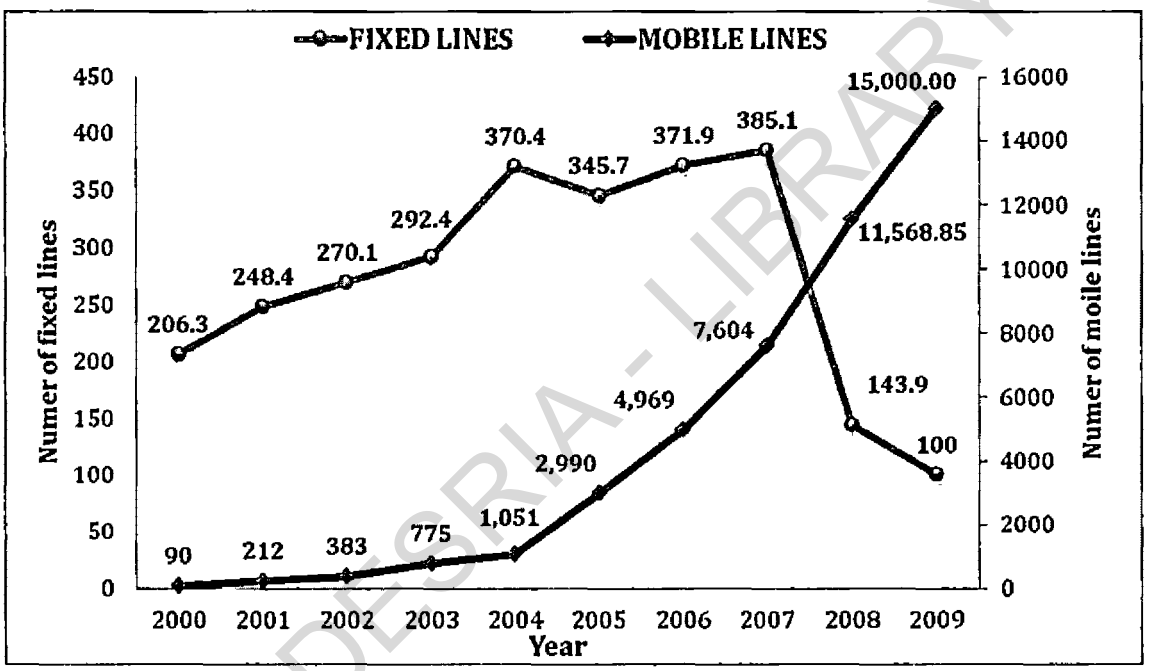
The introduction of mobile phones in Ghana affected the fixed-line telephone market and led to a significant drop in the numbers of these telephone subscribers. This is because Vodafone and Bharti Airtel are the only two fixed-line operators in Ghana compared to the competitive environment in the mobile phone industry with six operators. Competition is also hindered by the high concentration of the fixed telephone landline market being in the hands of one operator, Vodafone (who owns over 90% market share). Therefore, in 2010 the market share of fixed-line telephony as a percentage of the total telecommunications market stood at only 1.3 percent as against the mobile phone penetration rate (70.8%) (Frempong, 2012).

According to the NCA (2009) authority and regulator of mobile phone operators in Ghana, the total telephone penetration at the end of 2008 was 52.4 percent of which 99 percent were mobile phones and only 1 percent were fixed lines. The NCA also reported that at the end of the third quarter of 2009, mobile phone subscribers numbered more than 11.5 million as against fixed lines at 143 900 (Essegbey & Frempong, 2011). The 2012 Ghana Statistical Service Report showed a decrease of household fixed telephone lines (2.3%) and only 3.7% of urban households with fixed telephone landlines. According to Frempong (2012) the

Report of ITU (2011) show that the compound annual growth rate for mobile telephony in Ghana between 2005 and 2010 was 43.4 percent and fixed-line growth was negative, with its compound annual growth rate shrinking (2.1%). From 2014, according to the NCA, the penetration rate of fixed telephone landlines has continued to decrease from a figure of 0.94 per cent (as at January 2014) to 0.90 per cent (as at June 2014) (NCA, 2014a).

The figure below reveals the growth of mobile phones as fixed telephone lines decline from 2000 - 09[69].

Figure 3.1 The number of fixed telephone landline and mobile phone subscribers from 2000 – 09 (in Thousands)



Source: Oteng-Ababio 2010 (from the 2009 data of NCA Records in 2010).

Figure 3.1 above shows that since the introduction of mobile phones into Ghana in 2000, they have dominated all other ICTs in the country. According the 2010 census (PHC, 2010) in Ghana, fixed-line ownership is about 2 percent and 8 percent of that are for desktops and laptops. Greater Accra accounts for about 43 percent of households with a fixed telephone landline in Ghana, but this in local terms means only around one in every 20 households (namely, 5.3%) in the region has a fixed telephone landline. In Accra, only 17 percent of people own laptops or desktop computers with almost one fifth (8%) of the population of 12

[69]This diagram data is up to the year 2009 because it was the latest recent data I could have access to as my visits to the NCA office to assess more recent data was not fruitful.

years and older in Greater Accra using an internet facility[70]. In addition, a higher proportion of men (23.9%) use an internet facility than women (13.8%). This clearly shows that internet facility usage in the country is very low as Greater Accra is the region of Ghana with the highest proportion of the population that uses an internet facility, yet this is still less than 20 percent of the total.[71]

Mobile phones, therefore, have become the principal communication technology in Ghana in terms of ICT services. The 2012 RIA Ghana survey observed that even usage of public pay-phones, which have traditionally played an important role in Ghana's efforts to provide universal access to telecommunication services, has declined tremendously over the years, especially in the urban areas where the patronage was initially high. In 2007-08, there was a 47 percent public pay-phone patronage in urban areas, but in 2012 the figure reduced significantly to 17 percent. In particular, the introduction of mobile recharge vouchers in smaller denominations undermined the operations of the public payphones belonging to the two national fixed-line telephone operators (Frempong, 2012).

The 2012, RIA Ghana Household and Individual ICT Access and Use Survey also found that about nine percent (8.5%) of Ghanaian households have home computers, but only three percent of these computer households have internet connectivity via the home computer. Frempong (2012) observes that until recently, ownership of computers was essential to gain access to the internet, but today internet-enabled mobile telephone handsets provide primary internet access alternatives. With the introduction of low-bandwidth browsers and stripped-down social networking sites, low-cost access to the internet is now a reality. Mobile handsets and mobile modems (dongles) have now become the dominant connection methods for households and individual internet access in Ghana. The 2012 RIA Ghana Survey found that those who access the internet mainly engage in social networking activity for daily use and scarcely use the internet for activities such as internet banking, distance learning, voice communication, purchasing or ordering of goods and services or e-commerce (Frempong, 2012).

The 2012 RIA Ghana Survey also revealed that the deployment of fixed-line telephone services at household level is very low (2%) and these are predominantly found in the urban

[70] Ghana Statistical Service (2013a).
[71] Ghana Statistical Service (2013c).

areas, with rural households accounting for only a third of fixed subscriptions. It was noted that between 2006-10 the compound annual growth rate for fixed-line telephony was negative (-4.4%) (Frempong, 2012). Consequently, the two effects of the overall negative growth of fixed-line telephones and their rapid out performance by mobile subscriptions have meant that mobile phones have become substitutes for fixed-line telephones in Ghana. This differs in developed countries where mobile telephones are seen as complementary to fixed-line telephones, which also have extensive coverage and high penetration rates (Frempong, 2012).

In Ghana, other reasons for mobile phone subscriptions becoming a substitute for fixed telephone landlines and the alternative means of communication for most people is due to long waiting lists for fixed lines or because they live in areas that are not yet wired by Ghana Telecom (the main fixed-landline telecommunication Company in Ghana). It has also been noted that Ghana is undergoing leapfrogging since most mobile phone subscribers are first-time users (Falch & Anyimadu, 2003). Other researchers (Frempong et al., 2005; Frempong, 2009; Wallace, 2013) observe that another major factor influencing the popularity of mobile telephones in Ghana is the introduction of the pre-paid system (pay as you go or use system) at a lower cost and the provision of easy access by subscription for the majority of users who might have found the post–paid system expensive or difficult to obtain.

A 2004 survey in Ghana has revealed that the peak period when the majority (68.7%) of Ghanaians acquired mobile phones was during 2003-04 when the competitive era started among mobile phone network providers. This was essentially during the launching of their aggressive marketing strategies to improve their subscriber bases. The strategies launched included reduced prices of starter packs, lower call charges and various other incentive packages (Frempong et al., 2005). According to Frempong and colleagues, the price reductions were initiated by Mobitel (now Tigo), which reduced its tariffs by 34 percent in the early part of 2003 and later in the year embarked on promotional sales, when starter packs were sold at 149 000 cedis (US$16.39). Kasapa (now Expresso) also introduced a prepaid system and charged 800 cedis (US$0.088) per minute for own-network calls and 1200 cedis (US$0.132) for calls to other networks.[72] For its part, Areeba (now MTN) reduced call charges on its prepaid service from eight to six units per minute for peak periods and six to four units per minute for off-peak in November 2003. Prior to this, MTN had organised

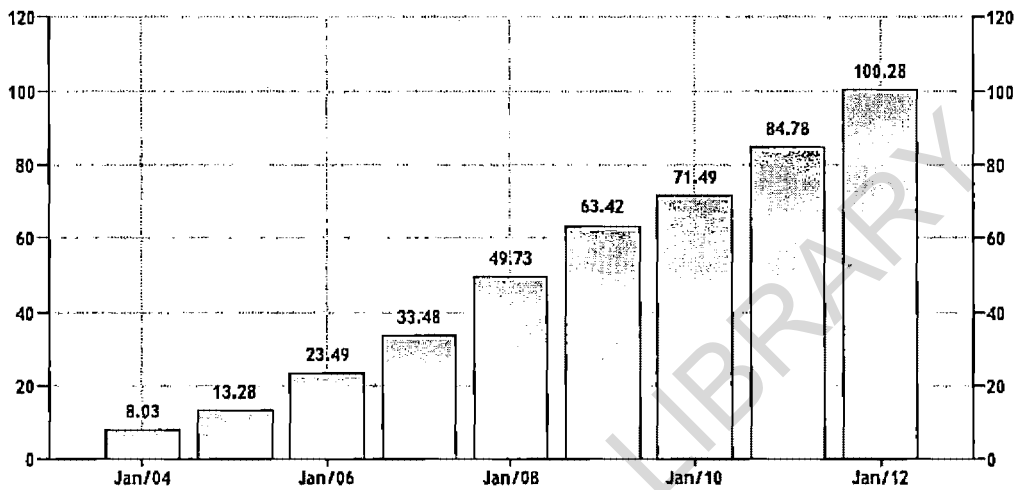
[72]All amounts are in the old Ghanaian cedis with the exchange rates of that period.

promotions, with a new car as first prize. These competitive activities attracted most of the mobile respondents which resulted in an increase of mobile phone subscribers and SIM prepaid subscriptions (Frempong et al., 2005).

Mobile phones not only made an impressive entry in the country to outstrip fixed telephone landlines but since then, SIM subscriptions have increased and continued to rise. According to the NCA, the telecom market experienced a growth of 10.8 percent in 2010 and achieved a penetration rate of 73.8 percent, with mobile telephones accounting for 97.97 percent of total access lines (ISSER, 2011). At the end of 2012, the mobile phone penetration rate was 100.41 percent and against this background Dowuona (2013) and Issah (2013) report that the rate of mobile phones penetration in Ghana has exceeded 100 percent. The NCA (2014**a**) Report also shows that as at January 2014 mobile phone penetration was 108.48 percent and this increased to 110.43 percent in six months (as at June 2014) (NCA, 2014**c**). More recent figure shows that as at December 2014, mobile phone penetration has increased from 110.43 percent (as at June 2014) to 113.37 percent (NCA, 2014**f**).

The chart below (Figure 3.2) shows mobile phone penetration rate in Ghana over the nine-year period (2004-12 inclusive).

Figure 3.2. Mobile phone penetration rate in Ghana (2004-12).



Source: Trading economies[73]

Dowuona (2013), however, observes that the 100 percent mobile penetration rate in Ghana does not imply that all Ghanaians have active mobile phone subscriptions yet. This is because, in Ghana, multi-simming is common, namely, one person has more than one active mobile phone prepaid subscription. This, he argues, might account for the over 100 percent penetration rate of mobile phones, but as stated above, the purchase of mobile SIM cards (and mobile handsets) is quite informal (without the requirement of ID as in other countries like South Africa and Norway) and the fact that they are mainly sold by sole-proprietor businesses that can be found in markets, open spaces and cities centres. This means that one can purchase as many SIM cards as one wishes.

Frempong (2012) also acknowledges that a relatively large percentage of this incremental increase of mobile phone subscriptions may be due to multiple SIM card ownership. He observes that data from the 2012 RIA Survey in Ghana indicate that almost 60 percent of the individuals sampled subscribe to a mobile telephone service (which is marginally up from

[73]Retrieved from: http://www.tradingeconomics.com/ghana/mobile-cellular-subscriptions-per-100-people-wb-data.html

59.8 percent in the RIA Ghana Survey of 2008). Of this number, more than one- third (28%) have multiple SIM cards, an increase from the RIA Ghana Survey of 2008 data, which found that only 11 percent of the sample had multiple SIM cards. According to Frempong, SIM cards have virtually become free, based on the competition in the mobile market. For instance, Tigo ran a promotion giving free SIMs to all arriving passengers at Accra's Kotoka International Airport (Frempong, 2012).

3.3.3 Gender differences in mobile ownership in Ghana and its capital, Accra

The 2010 census (2010 PHC) revealed that 47.7 percent of the Ghanaian population (twelve years and older) owned mobile phones. However, among this same age group (i.e. twelve years and older) mobile phone ownership is higher among men (53.0%) than women (42.8%).[74] According to the 2010 Census, the ownership of mobile phones was also noted to be concentrated in urban areas (63.4%), of which 42.8 percent were owned by women.

It is noted that in the ten regions in Ghana, mobile phone ownership (of persons 12 years and older) was higher in Greater Accra (27.2%), followed by the Ashanti region (23.1%). In Accra, the ownership of mobile phones is higher among women (28.8%) than men (25.9%)[75]. Together, these two regions accounted for just over half of mobile phone owners (men and women) in the country. While the two regions had less than half (48.0%) of the male mobile phone-owners in the country, it is interesting to note more than half (52.7%) were female phone-owners in Ghana. This could be attributed to the fact that, more recently, there are more women in the informal economy[76] in the two principal cities of Accra and Kumasi (in Ashanti region), who have come to depend on their mobile phones to transact business. It also reveals the fact that more women are becoming aware of the need to use technology to make their lives easier. The Ghana Statistical Service argues that this could also be explained as women need a means to engage in communication that will improve their livelihoods and help them to achieve their human rights[77] .

It was noted by the Ghana Statistical Service that educational attainment correlates with mobile phone ownership in Ghana. This is because the percentage of the population that owns mobile phones increases as the level of education increases. According to the 2010

[74]Ghana Statistical Service (2013a).
[75]Ghana Statistical Service (2013a).
[76] Informal economy referred to here because in Ghana women predominate in this economy.
[77]Ghana Statistical Service (2013a).

census, the distribution of Ghana's population 12 years and older with basic education (Middle/JSS/JHS) had the highest share of people owning mobile phones (40.7%) and the same percentage was recorded for both men and women in the same education category. This was followed by those with Secondary/SHS education (18.9%) (consisting of 20.5% men and 17.1% women). People with vocational and commercial levels of education accounted for the lowest share of mobile phone ownership (4.0%). While only one quarter (25.0%) of those with no education owned a mobile phone, nearly all those (97.2%) with tertiary level of education had a mobile phone.[78] This data suggests that the differences and inequalities between men and women in mobile phone ownership are due to their differences in educational levels. Below is a table showing Ghana's population 12 years and older who own mobile phones.

Table 3.2 **Ghana's population 12 years and older who own mobile phones (percentages of levels of education by sex)**

Educational level	Both sexes	Men	Women
Never attended	25.0	30.0	22.1
Primary	26.1	25.2	26.8
Middle/JSS/JHS	54.0	56.4	51.5
SSS/SHS /Secondary	72.4	73.6	70.7
Vocational/Technical/Commercial	86.5	86.7	86.4
Post Middle/Secondary certificate	92.8	92.2	93.6
Tertiary	97.2	97.1	97.5

Source: Ghana Statistical Service (2013a).

It can be seen in Table 3.2 that the percentages of the population that own mobile phones increases as the level of education increases. While only one quarter (25.0%) of persons with no education owned a mobile phone, nearly all persons (97.2%) with tertiary level of education had a mobile phone. The differences between men and women in mobile phone ownership disappear at higher levels of education.[79]

Mobile phone ownership in Accra is higher among those with higher education levels to the extent that it is almost universal at the top most levels. According to the 2010 census 52

[78]Ghana Statistical Service (2013b).
[79] Ghana Statistical Service (2013a).

percent of persons (12 years and older) with no education own mobile phones, 47 percent with primary education own mobile phones and 98 percent of those with a higher education own mobile phone in Greater Accra. Among the eight educational levels, mobile phone ownership is higher for men than women for those with no education, JHS/Middle, Secondary/SSS/SHS, and Vocational/technical/commercial training or education. It is higher for women among those with primary, post-middle/secondary certificate, post-secondary diploma and higher education. Thus, at the three highest levels of education, mobile phone ownership is marginally higher for women. This may indicate that in Accra education bridges the inequality gap between men and women in some respects[80]. Table 3.3 below shows mobile phone ownership percentages in Accra per education and sex.

Table 3.3 **Accra's population 12 years and older with mobile phones (percentages per education and sex)**

Educational level	**Both sexes**	**Men**	**Women**
Never attended /no education	52.4	58.2	50.1
Primary	47.0	45.6	48.0
Middle/ JSS/JHS	72.2	75.0	69.6
SSS/SHS /Secondary	84.5	86.2	82.5
Vocational/Technical/Commercial	93.1	93.5	92.6
Post Middle/Secondary certificate	93.7	93.2	94.1
Post-Secondary diploma	96.6	96.5	96.7
Higher	97.6	97.6	97.7

Source: Ghana Statistical Service (2013c).

The mobile phone is considered a technological tool and therefore ownership could be expected to be higher among persons with education. From table 3.3 it is clear that aside from the differences between no education and primary education, mobile phone ownership increases with educational levels, to the extent that it is almost universal at the highest levels, with 97.6 percent of those with a higher education owning a mobile phone.

[80]Ghana Statistical Service (2013c).

3.3.4 Mobile phone usage patterns among Ghanaians

Since mobile phones have become the principal communication technology in Ghana they have become increasingly important. This importance relates not only to the flexibility they offer for vocal or oral communication, but also to the fact that their platforms support many innovative activities such as location-based services (LBSs), mobile money services, and access to critical information. The 2012 RIA Ghana Survey confirms that differences exist in the use of mobile phones in Ghana as not all users are able to exploit their mobile phones to benefit from the services available on them. The 2012 RIA Ghana Survey revealed that the majority (99.1%) of mobile phone users operated their mobile phones mainly for calls (making and receiving). The next highest use (64.5%) were the 'flashing' functions (missed call or call-back request) and sending and receiving SMSs (60.5%). Other high-use indications were the exploitation of the handsets for its radio or music capabilities (47.9%); the use of the phone as a personal organiser (47.7%); taking photos or video clips (38.8%) and playing games (37.3%). Relatively few respondents exploited their downloading applications, namely, using skype and sending and receiving money (Frempong, 2012). According to the Internet users' population and Facebook statistics for Africa 2012, in which Ghana's population was a little over 25 million, there were 3.5 million Ghanaians using the internet with 1.6 million of them involved in Facebooking (Amoah-Darkwah, 2014). Anecdotal evidence in Ghana shows that the Ghanaian youth now prefer smart phones to access mobile phone applications such as Facebook, WhatsApp, Web browsers and so on; whereas the adults are much more interested in making calls and sometimes sending texts - though the latter use is not a common feature among them. Wallace (2013) contends that what explains a preference for calling over texting among adults is the chance to use one's own local language and the illiteracy factor.

It is argued that the keypads of mobile phones where symbols, letters and punctuation are not presented clearly complicate use as users have to look for characteristics by making multiple key presses and not knowing which key to press. This complicates the procedure of assessing the available services (such as texting) on such mobile phones. For this reason changing from alphabetical to numerical is not straight forward and of a clear process for text messaging which would make texting to be tedious and difficult (Balakrishnan & Yeow, 2007) especially for those who lack technical literacy and basic language literacy. Texting requires technical literacy: the mastery of the techniques of text entry. For instance changing from the alphabetical to numerical keypad and being creative in the use of language in order to be able

to maximise the hundred and sixty (160) characters that are allowed per message (Balakrishnan & Yeow, 2007). The complex nature of mobile phones, for instance 2G and the lack of technical literacy makes it difficult to learn and use other mobile services beyond the voice communication feature, especially among users of low educational levels.

One must also be able to decipher the meaning of the abbreviations used in order to understand the content of the message (Balakrishnan & Yeow, 2007). At a more basic level, understanding texts assumes familiarity with a written language, i.e. basic language literacy. Balakrishnan & Yeow (2007) further argue that the interface and nature of mobile phones such as 2G[81] is loaded to accommodate all the available alphabets, letters, numbers and punctuations. This suggests that one therefore needs technical literacy to master the techniques to enter text on such phones. Therefore assessing mobile services beyond the voice call functions with regards to texting requires some forms of literacies which include basic language literacy and technical literacy.

The introduction of Short message service (SMS) or texting and its use have led to the formation of a new language for texting particularly among the youth. Given the 160 character restriction, mobile phone users have been forced to become creative in using fewer letters or symbols to convey meanings. Examples include: BTW- by the way; CU- see you; BC- because; P/S-please; U-you; WKND-weekend; TKS- thanks; and so on. The language of text has become so common, that SMS abbreviations have recently made their appearance in the oxford dictionary (Strivastava, 2004). This therefore implies that with this new language formation for texting, one has to be familiar with a language (basic language literacy) to be able to decipher the meaning and content of a message sent.

Donner (2008) also observes that apart from providing voice calls and texting, mobile phones deliver other various useful services. According to Frempong (2009) many people used mobile handsets innovatively to deliver social, economic, cultural or political services, and these innovations have made the mobile handset a strategic socio-economic development tool. For one thing, mobile phones can now serve as a platform for money mobile transfer and mobile banking services; however, the 2012 RIA Ghana survey noted that the adoption and use of mobile money services is still its formative stage in Ghana as only 1 percent of the survey sampled had used a mobile money service (Frempong, 2012). This implies that mobile money services are not yet a common phenomenon among mobile phones users in

[81]Samples of 2G mobile phones owned by women in this study exemplify this assertion (see Appendix 3).

Ghana. This might again suggest the educational inequality among users tend to be associated with one exploring the more advanced mobile services provided by mobile phone network operators in Ghana.

Nevertheless, while mobile phones are used in Ghana as functional devices for calling, sending text-messages, internet browsing, or delivering mobile services and so on, they have also entered into the nation's symbol panoply (Katz 2006); it is now possible to buy fantasy coffins made in the form of a mobile phone. As such, mobile phones appear to have become ingrained into the everyday life of Ghanaians and the Ghanaian economy at large.

3.3.5 Ghana's mobile phone industry's contribution to development

Undoubtedly, the mobile telecommunication industry with its six mobile phone network providers (in 2012) has made a significant contribution to the development of the country. According to Teppeh (2011) and Dziwornu (2013) mobile phone network providers generated about 10 percent of the government's total revenue and contributed 2 percent to the GDP. According to the World Bank and other renowned economic think tanks, any 10 percent mobile penetration leads to about a 1.2 percent growth in a country's GDP. In 2010, mobile operators and certified mobile phone dealers in Ghana employed over 6000 full-time workers and there were over 1.5 million people, whose employment related to the industry through the retailing of telecom accessories and scratch cards. Therefore, the economic benefits of the mobile telecommunications industry far exceed the revenues and value-added services it generates; the workers it employs; and the wages paid out to these workers (Teppeh, 2011; Dziwornu, 2013).

It is also argued that the mobile telecommunication industry's enhancement of Ghana's economic growth opportunities appears endless. This is because the growing demand for mobile telephony services leads to many business opportunities as mobile phone usage continues to spread to every sector of the Ghanaian society (Dziwornu, 2013) not exempting the informal economy. Several researchers in Africa (De Bruijn et al., 2009: Etzo & Collender, 2010; Chiumbu & Nyamanhindi, 2012) observe the emergence of a large informal economy on the Africa continent[82] to support the mobile phone industry with people selling

[82] For instance in countries like Zimbabwe, Tanzania and Malawi.

airtime or credits, decoding, renting and repairing mobile phones and so on. This is certainly reflected in Ghana since the introduction of mobile phones and with an abundance of mobile phone provider companies, as mobile phone handsets and their accessories as well as their services (SIM cards, airtime) can be found everywhere: in bars, markets, roadside shops and on the streets where they are hawked. This also applies to the creation of a wide market for mobile phone handsets and accessories in Accra.[83] In addition, as new and sophisticated mobile handsets are being introduced in the country, many people have found further job opportunities in the industry. One can, for instance, find several brands and sizes of mobile phone handsets with different price ranges on the Ghanaian market. This has created a large informal economy in the country for many MSEs to market mobile handsets, mobile accessories and mobile services. As such, many MSEs have created job opportunities through self-employment as they have developed expertise in the decoding and repairing of mobile phones. Others trade in airtime or credits and the mobile money-transfer businesses. Many business people (predominantly young men) also travel to other countries to purchase mobile phone handsets and return to sell them wholesale or retail to other traders who have established their own micro-mobile phone enterprises. However, mobile handsets are mostly imported into the country from the UK, USA, and China. Anecdotal evidence suggests that most mobile handsets brought into Ghana are from China.

Nonetheless, Ghana can boast of one local mobile phone manufacturer, Rlg Communications Limited, as the first and leading Ghanaian computer and mobile handset manufacturing company based in Accra. It started operations in Ghana in 2002, first as a small internet café, and later as a mobile phone repair and sales outlet known as Rogam Links. In 2006, the company was rebranded as a limited liability company, Rlg Communications, then as a subsidiary of the Agams Holdings and in 2012, it became a separate entity from Agams Holdings. It is the first indigenous African company to assemble laptops, desktops and mobile phones and offer ICT training in computer and mobile phone repairs (Rlg, 2014)[84]. With branch offices in all the ten regions in Ghana the company has provided employment and skills to thousands of Ghanaians. More recently, it introduced a total of 18 R-series and G-series mobile phones into the local, continental and Asian markets (Dowuona, 2010; Modern Ghana News, 2010). Again, this reflects interconnections of the formal and informal

[83] The biggest market selling mobile phones in Accra is located around a major regional transport station, Kwame Nkrumah Circle.
[84] This background information of Rlg Company is from their Company's website: http://www.rlgglobal.com/about-rlg

economy[85] as mobile handsets and associated information technologies from Rlg Company are marketed by local MSEs, specifically sole proprietorships, in the country. It can be said, therefore, that mobile phones paved the way in the setting up of an information and communication technology manufacturing company in Ghana.

Today, mobile phones are key means of communication and have become an essential part of the everyday lives of Ghanaians. From the Chief Executive Officer of both private and public institutions in Ghana to the businessman, from auto mechanic through to the office cleaner to the female marketer – all make use of mobile phones in their day-to-day activities. As Wallace (2013) argues, mobile phones have become available to all people in Ghana irrespective of income levels, gender, age and education. Nearly all adults that one encounters in Ghana, particularly in cities like Accra, are either seen carrying or fidgeting with a mobile phone or sometimes carrying more than one mobile handset. According to the Ghana Branch of the North American Women Association (NAWA, Ghana)[86] (2013) mobile phones have become available to many Ghanaians because in Ghana, mobile phones are relatively cheap. A mobile phone will cost about 35 Ghana cedis (less than US$20), this prices are however, changing with the introduction of more recent mobile handsets (smartphones), which are more costly. NAWA Ghana (2013) adds that there is no need for expensive 'calling plans' as one would find in other countries (namely, North America), and top-ups (airtime/credits) are as minimal as one Ghana cedi and obtainable at a kiosk or on the street. Such aspects not only facilitate but also explain the prevalence of mobile phones in Ghana.

The prevalence of mobile phones in Ghana and across the world exemplifies their use for a wide range of services and applications and means that they are more than a technology for voice or oral communication. This raises several more questions: What accounts for mobile phones offering a wide range of services and applications beyond voice communication? How were these developed over the years? The next section will attempt to discuss how mobile phones as voice communication technologies, were revolutionised to become computers and digital technologies.

[85] This is one of the reasons reflecting why Ghana informal economy can best be conceptualized within the structuralist view of informal economy.
[86] NAWA is a volunteer organization dedicated to promoting friendship and cultural activities among women of nationalities residing in Ghana and to supporting charitable projects in the country.

3.4 Mobile phones more than a communication technology

3.4.1 Mobile phone network developments over the years

In recent times mobile phones have been transformed beyond simple voice communication technology. This is because the innovative developments in mobile phone networks and applications over the years, have introduced service platforms beyond the basic communication functions (i.e. calling and texting). When initially developed in the 1980s, mobile phones were based on a first-generation (1G) network which was analogue and comprised a voice communication facility (for speaking and hearing only) (Kauffman & Techatassanasoontorn, 2005; Kumar, 2010). The introduction of the Groupe Spécial Mobile (GSM) (now referred to as Global System for Mobile Communication) in the early 1990s, which was an advancement over the Time Division Multiple Access (TDMA) technologies, led to the development of digital wireless phone technologies known as second generation (2G) mobile phones (Kauffman & Techatassanasoontorn 2005; Castells et al., 2007; Scharnhorst et al., 2008; Kumar, 2010). It has been argued that even though 2G cellular systems include the GSM, the digital Advanced Mobile Phone System (AMPS), the Code Division Multiple Access (CDMA), and the Personal Digital Communication (PDC), the most widely used technology in 2G is the GSM (Tondare et al., 2014).

The 2G mobile phone was based on the GSM and CDMA, and replaced IG to introduce data services such as text messaging, web surfing, banking and games with limited graphics. The 2G digital wireless mobile phone, therefore, offers improvements over the existing analogue technologies and provides better sound quality and has a higher resistance to interference and signal fading. The extension and development of the mobile phone network, Universal Mobile Telecommunications System (UMTS) and CDMA 2000 introduced another type of mobile network; the 2.5G, which enabled applications such as multimedia messaging service (MMS), audio facilities, mobile banking, mobile intranet access, file transfer, still pictures and video-clip downloads (Kauffman & Techatassanasoontorn, 2005; Kumar, 2010).

To further enable the use of rich media applications involving video clip, audio downloads or browsing websites with multimedia content, the 2G and 2.5G mobile networks needed to be improved and migration towards 3G was seen as the only way forward. Therefore, the 3G mobile network was introduced under the International Mobile Telecommunication 2000 (IMT-2000) initiative of the ITU (Kauffman & Techatassanasoontorn, 2005; Kumar, 2010).

Further, as Kauffman & Techatassanasoontorn (2005) and Scharnhorst et al. (2008) point out, the 'enhanced data rates for GSM evolution' (EDGE) technique represented the final step in the evolution of mobile telephone from the GSM to the UMTS, namely, from 2.5G to 3G which allowed for an increase in data transfer rates per traffic channel. Following this, these researchers also reveal that in 2002 Japan launched the first 3G services. The introduction of a third-generation (3G) mobile network added multimedia facilities to the 2.5G phone by allowing advanced data and multimedia phone applications such as video calls and conferencing, audio and video streaming, enhanced MMS, advanced video games, internet access, rich media and live TV.

Sanders et al. (2003) also point out that to boost the data transfer rates of the GSM networks, the General Packet Radio Service (GPRS) was introduced in 1995. In light of this improvement in the mobile networks, the 3.5G mobile network was then introduced. Kumar (2010) states that the development of the 3.5G mobile phone added more advanced applications to the 3G phone. Since then, the successor of the 3.5G phone, the 4G, has provided mobile ultra-broadband internet access with applications such as e-readers, mobile marketing and geo-targeted advertising (Kumar, 2010). Tondare and colleagues state that 4G wireless technology is also referred to as MAGIC (for Mobile multimedia, Any-where, Global mobility solutions over, Integrated wireless and Customized services) as 4G is all about convergence: convergence of wired and wireless networks, wireless technologies including GSM, wireless LAN, and Bluetooth as well as computers, consumer electronics, communication technology and several others. As Tondare et al. (2014:6164) have put it: 4G is "mobile multimedia, anytime anywhere".

The wireless industry continues to develop mobile phone networks with the introduction of the Long Term Evolution (LTE) advanced networks like the 4.5G mobile services (Tondare et al., 2014) and the journey from analogue mobile communication is still on its developmental path as 5G mobile phones are on their way. Figure 3.3 presents a graphic depiction of the development of mobile phones from 1G to 4G.[87]

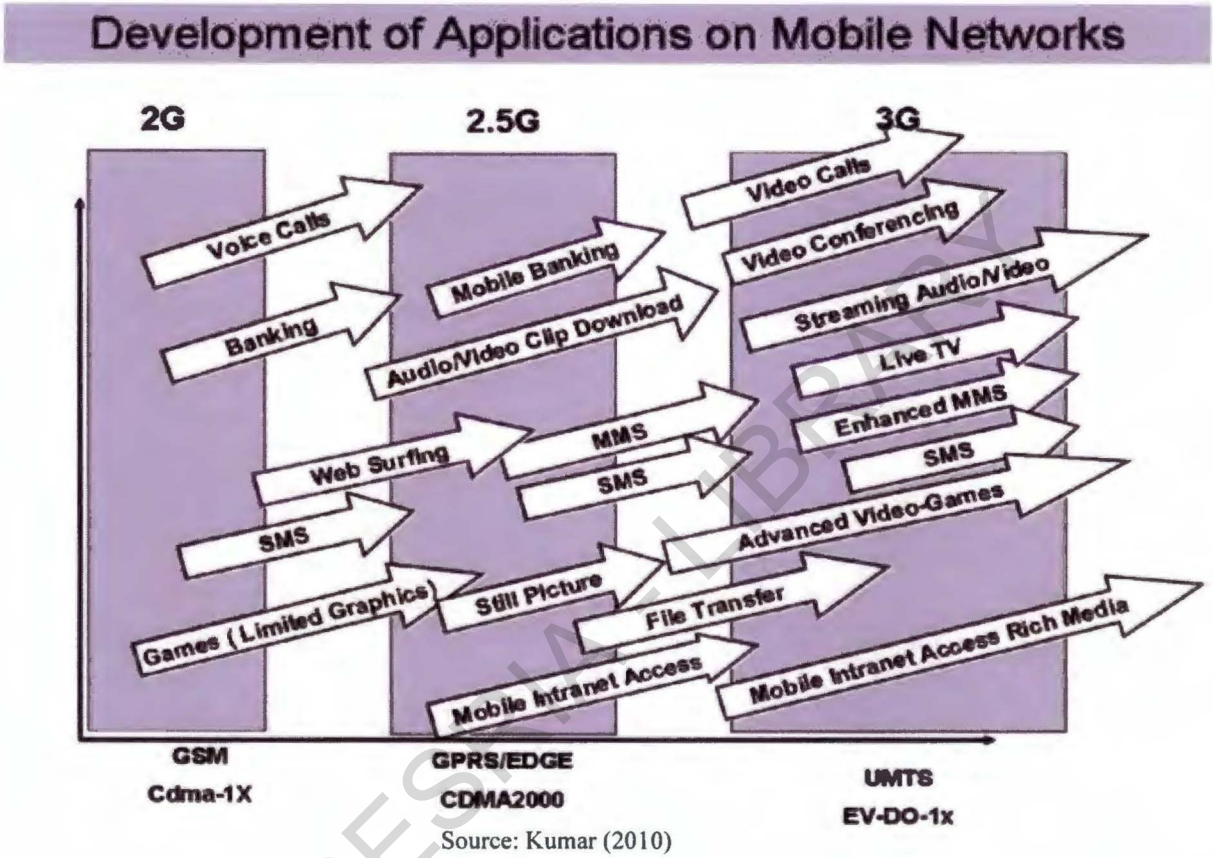
[87]See Appendix 2 for the development of mobile phones as sizes and networks is advanced from 1G to 4G.

Figure 3.3 The development of mobile phones from 1G to 4G

Source: Kumar (2010)

The various features and services associated with the development of mobile phones over-time are shown in the Figure 3.4 and figure 3.5 below.

Figure 3.4 The development of mobile phone application networks and service from 2G to 3G)



Source: Kumar (2010)

Figure 3.5 The key data features of 1G, 2G, 2.5G, 3G, and 4G mobile phones

Source: Information Technology Topics (2011)[88]

In noting these advancements over the years, recent mobile phone networks now comprise both old and new media technologies. In this context, by purchasing a (recent) mobile phone, the user has access to new applications (namely, games, videos, a camera) as well as the "old media"[89] technologies (namely, radio, television, movies, journals and even newspapers) through an internet facility.

Jenkins (2006) observes that old media are not being displaced but rather their functions and status have been shifted by the introduction of new technologies, like mobile phones and its associated ICTs – the new media. In this regard, Kumar and Thomas (2006) point out that mobile phones combine characteristics of old and new media; the latter feeding off old media such as recorded music, photography, cinema, as well as radio, television and the press, whereas the new media are used to extend storage, processing and distribution capacities.

Since mobile phone networks now comprise both old and new media they can be said to have migrated mobile phones from an exclusively voice facility to an increasingly multifunctional

[88]Retrieved from http://information-technology-topics.blogspot.com/2011/09/cellular-generations-0g-1g-2g-3g-4g-5g.html

[89]Old media technologies here refer to existing technologies before the arrival of the new medium of the internet.

purpose by offering a wide range of services and applications. Therefore mobile phones have been referred to as "Swiss army knife"(Jenkins, 2006) because beyond calling and texting, they function as a camera, video recorder, photo album, rolodex, an e-mail reader, mini-note book, bus ticket, game, calendar, clock, an alarm, calculator, radio or Mp3 player, navigator, and a wrist watch among other services such as e-banking and e-commerce functions (Lorente, 2002; Larsen, 2005; Wajcman et al., 2007; Kushchu, 2007; Frempong et al., 2007; Ling & Donner, 2009; Gikenye & Ocholla, 2010; Chiumbu & Nyamanhindi, 2012) .

The advancement of mobile phones from being only 'a voice device or facility' to the smartphone which offers a wide range of uses and services means that they are, in effect just like computers. The new (recent) mobile handset also comprises a micro-processor and Liquid Crystal Display (LCD) that enables sending, receiving, storing, showing and changing of data in any required form and includes other functioning aspects such as games, an address book and so on (Agar, 2004). It is also argued that the advancement of mobile networks led to the integration of a variety of functions in a single mobile handset and has led mobile phones to become a multimedia information processor seemingly "fitted with an array of conveniences" (De Vrie, 2005:24) and services which makes them more than a 'communication devices'.

Castells et al. (2007) point out that such developments of mobile handsets have led to the emergence of a series of 'm'-neologisms such as m-commerce, m-learning, m-literature, m-government, m-etiquette, m-blog and so on, in recent times. Iqbal (2010) also notes that mobile phones form part of a complex digital medium that provide people with a variety of methods of interpersonal communication (with texting, e-mail, radio and internet) and further diverse functions such as those mentioned above (like digital camera, games and an MP3 player). The mobile handset, an easily moveable technology, is therefore an access point for communication that enables the retrieval of diverse forms of information (messages) and the connection of users to each other. In other words, the mobile handset a facilitating technology that enables processes by which people not only to communicate, interact, create, sustain and manage meanings (Chandler, 2008) but gain access to a range of services provided. One can, therefore, note, along with writers such as Berger (2008) and Chan (2013), that there are "1001 uses" of mobile phones beyond the communication function or benefit making mobile phones to be now characterised by both communicative and non-communicative uses.

3.4.2 The *communicative and non-communicative role: mobile phones and society*

Owing to the wide range of services that mobile phones offer, a number of studies have revealed how versatile they have also become in the everyday lives of individuals, business and the world at large. Significantly, mobile phones first enhanced the coordination of daily activities particularly among family and peers for 'instrumental' purposes (Ling 1998, 2004). Ling and Yttri (1999, 2002) described these instrumental purposes of the mobile phone as "micro-coordination" which involve basic logistics (namely, redirecting trips that have already started) softening of time (namely, calling someone to let him or her know you are running late), and progressive refinement of an activity such as filling in details of open-ended plans. Ling (2004: 58) contends that the instrumental purpose of mobile phones to enable micro-coordination is one of the "greatest social consequences" of mobile phones. Geser (2006) adds that mobile phone usage for micro-coordination purposes has been noted in transnational empirical studies as one of the outstanding advantages of mobile phones. This suggests that mobile phones play a significant role in improving communication as they enable timely and better scheduling among family, peers and people in the world at large.

The role of the mobile phone in the enablement of micro-coordination goes further. They have helped to establish, maintain and strengthen social ties and, as Ling (2004) argues provides a connection with others anytime, anywhere, in a state of "perpetual contact" (Katz & Aakhus, 2002: 308) with other people. Greater connectedness with others anywhere and anytime means that mobile phones facilitate the compression of time and space (Ito & Daisuke, 2003; Giddens, 2006). This opinion is buttressed by Fortunati (2000) who comments that with the introduction of mobile communication, social systems have become less location-based and more people-based therefore individuals can stay in touch with one another on the move, and maintain a "nomadic intimacy", as mobile phones make it possible for one on the move to remain embedded in his or her personal social networks. Mobile phones, therefore, enable "people to be physically present, yet distant" (Calefato 2003:165).

It is further argued that by enabling people to stay connected and maintain "nomadic intimacy" by managing social relations across time and space, mobile phones tend to reduce feelings of loneliness and insecurity. However, there is also the notion, according to Geser (2004: 12) that mobile phones can cultivate regressive psychological tendencies because they allow the "retention of primary social relationship[s] over long distances with the need to cushion the traumatic experiences of living in a foreign land by remaining tightly connected

to loved ones back home". Similarly Lorente (2002) refers to mobile phones as a "pacifier for adults" and Geser attributes to them the capacity to reduce "the feeling of loneliness and vulnerability at any place and time" (Geser, 2006: 11). This correlates with Geser's (2004: 16, 2006: 11) other assertion that "mobile phones tend to level out emotional oscillations by making farewell less dramatic because we can always 'keep in touch', and by dissipating the thrill and bliss connected with seeing each other again, because the void created by long absence can be closed with emails, calls, Short Message Service (SMS) and various other trans-local communications". This is also in line with the assertions by Palen, Salzman & Youngs (2000) and Ling (2008) who nickname mobile phones as an "umbilical cord" because they keep children connected to parents during periods of spatial distance.

It has also been said that the establishment of connectedness via mobile phones facilitates the maintenance of social networks (Goodman, 2005; Rettie, 2008; Brinkman et al., 2009; Mehta et al., 2011). This follows Gergen (2002) and later Ling (2004) who first maintain that mobile phones enhance perpetual connectivity with existing close ties and therefore maintain relationships with relatively large number of contacts (Ellison et al., 2007). Chan (2013) affirms that social networks, as an outcome of repeated or regular social interaction, is supported by mobile phones with their range of social network services (such as texting and Facebooking) which provide useful ways of sustaining relationships and, therefore, facilitate the maintenance and establishment of social networks.

It has also been asserted that mobile phones – by establishing and maintaining social networks– increase trust among family and friends. As revealed by Ling (2008) and Yu (2011) the enablement of a "connected presence" (Licoppe, 2004) via mobile phones not only facilitates and maintains relationships and social networks, but frequent mobile communication also helps increase the level of trustworthiness with close knit ties.

Ling & Yttri (1999, 2002) and Campbell & Russo (2003) also observe that mobile phones serve as a means of self-presentation and personal expression. This is because individuals use mobile phones in expressive ways: for romance, chatting, and sharing jokes with friends and the like, and to sustain and reinforce social network membership. Such expressive uses of mobile phones have been dubbed as "hypercoordination" by Ling and Yttri (1999: 2002).

In terms of personal identification mobile phones play a role when used for calling, texting, taking photos and storing individual numbers (Katz & Aakhus, 2002; Pfaff, 2010). This is exemplified in Ling and Yttri's (2002) study as they recount how mobile phone usage among adolescents facilitates a sense of belongingness and their membership of groups. Fortunati (2005) also remarks that mobile phones are objects in which users invest a sense of identity and personality. Katz & Sugiyama (2005: 64) advance the notion that mobile phones become a "miniature aesthetic statement about its owner" as they facilitate the processes of personal identity construction. Ling and Pederson (2005:80) affirm that the mobile phone has also become a "communicative device that reflects and embodies the user and is used to communicate effectively with the physically present audience; passive though it may be as much as distant interlocutor, as ethereal it may be". Mobile phones have also been viewed as fashion accessories as they have become "every bit as much as fashion statements as the choice of one's clothes. And equally as the choice of clothes could include secular as well as sacred garb, so too the 'fashion' statement of a mobile phone can be used for purposes ranging from the temporal to the transcendental" (Katz and Sugiyama, 2005, cited in Ling & Pedersen 2005: 79). Also in terms of fashion, Kushchu (2007) remarks that mobile phones are starting to shape the perception of other accessories, for instance, wrist watches which once served a direct function of showing time, are now worn more out of habit or as an essential style feature.

In terms of other non-communicative functions, Litondo (2012) and Chiumbu and Nyamanhindi (2012) reveal that mobiles phones provide employment and entrepreneurship[90] opportunities such as selling mobile handsets, mobile phone covers and airtime, as well as repairing phones and receiving and sending money. As mentioned earlier this is also noted in the writing of Trager (1987) as he argues that the prevalence of mobile phones plays a significant role in the interconnectedness between the formal and informal economy because they have led to informal employment opportunities in trade and commerce. Thus the emergence of a formal sector industry can lead to new opportunities in areas like trade. In other words, these employment opportunities owing to the introduction of mobile phones are not only restricted to the formal economy but also found in informal economy. This reflects the prevalence of mobile phones, not excluding members of the informal economy such as women micro traders. This study then becomes necessary as it assesses the effect of mobile

[90]This is particularly in less developed countries like Africa.

phones on the informal economy of Accra with reference to wholesale and retail women micro traders.

3.4.3 The role of mobile phones in micro-trading activities

As the most effective communication technology that connects individuals to other individuals and information to markets, mobile phone has become the most convenient means of information exchange (Scharnhorst et al., 2008). It has been acknowledged that information is a vital component in the smooth functioning of trade or markets as trade is an information-rich activity (Madden & Savage, 1998; McMillian, 2002; Abraham, 2007; Sife et al., 2010).

Now mobile phones are one of the ICTs that aid in the provision of access to information for market efficiency and the smooth functioning of trade, a number of studies have revealed the innovative application of ICTs and particularly the effects of mobile phones on the smooth-running of market and trading activities in the face of challenges associated with information uncertainties and inadequate infrastructure such as bad roads, poor road networks or unreliable middlemen. For instance, studies by Molony (2006) in Tanzania; Overå (2006) in Ghana; Abraham (2007) and Jenson (2007) in India; Jagun et al. (2008) in Nigeria; Roldan & Wong (2008) in Bangladesh; Aker (2008) in Niger; and Sife et al. (2010) in Tanzania; have shown that the adoption of mobile phone technology by micro-traders has resulted in a reduction in wasted time, resources, uncertainty and risks and in easy access to prices and market information. The work of Aminuzzaman et al. (2003) in Bangladesh; Donner (2004) in Rwanda; Samuel et al. (2005) in South Africa, Tanzania and Egypt; and Munyua and Mureithi (2008) in Kenya, as well as Brinkman, De Bruijn and Bilal (2009) in Sudan and Aker and Mbiti (2010) in Indian have also shown that the adoption of mobile phones by traders has increased consumers, enhanced traders' welfare, maintained customer relationships and widened business networks.

Donner and Escobari (2009) have summarised 14 research studies that examine mobile phone use by MSE traders and conclude that mobile phones help such trade to become more productive in performance through improvements to their sales and marketing as well as procurement processes. Studies by Souter et al. (2005) in Gujarat, Mozambique and Tanzania and by Wallace (2013) in Ghana also show how mobile phones have affected the productivity of traders, intermediaries and consumers by enabling them to access more information about the availability and price of goods to save them travelling time and thus enhance their market

performance. Such effects on trading activities show the role mobile phones play in the increase in access to markets and the performance of trade. According to Boateng (2010, 2011) these kinds of effects are strategic benefits and are generated when mobile phones are adopted for micro-trade purposes.

Further studies have also shown that the use of mobile phones for trading has demonstrated the following impacts:

- Improved access to information in markets and the reduction of physical journeys and information asymmetries thereby saving costs in transaction and transportation (Donner, 2004; Kyem & Le Marie, 2006; Jagun et al., 2008, Muto & Yamano, 2009; Sife et al., 2010).
- Enhanced planning and decision-making and also reduction in the feelings of isolation by making micro-traders feel more safe and secure (in case of any emergencies when away on their business transactions as they can contact family and loved ones (Aminuzzaman et al., 2003; Donner, 2004; Abraham, 2007; Jagun et al., 2008; Boateng, 2010; Wallace, 2013).
- Enabled the creation of employment opportunities and commencement of new businesses (Samuel et al., 2005; Donner & Escobari, 2009; Aker & Mbiti, 2010).
- Served to by-pass middlemen (Donner & Escobari, 2009; Wallace, 2013).
- Augmented a check on debtors (Frempong, 2009).
- Enabled easy contact between consumers and suppliers in trading (Samuel et al., 2005; Kamga, 2006; Abraham, 2007); easy access to customers and therefore better maintained customer relationships (Esselaar et al., 2007; Jenson, 2007; Overå, 2008; Boateng, 2010, 2011; Sey, 2011).

The noted effect of mobile phone on trading activities with reference to easy contact between traders and their trading networks leading to maintenance and better relationships are all associated with improved communication and relationships between actors involved in transactions which according to Boateng (2010, 2011) provide "relational benefits".

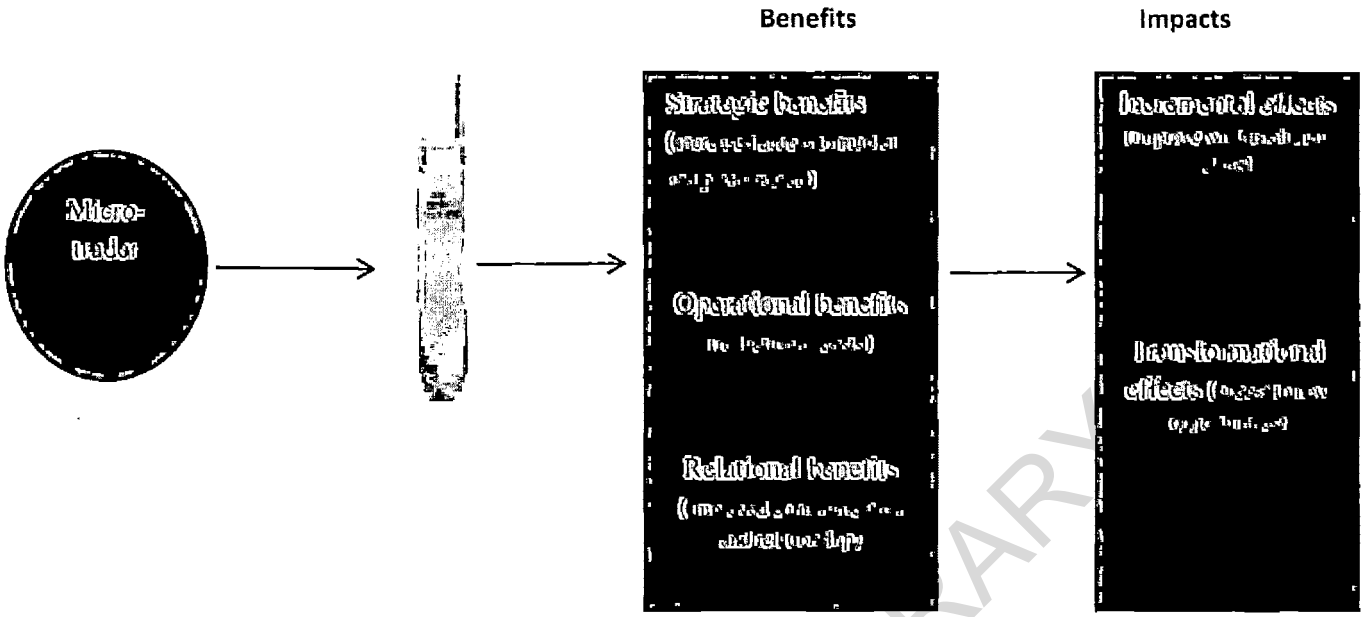
In terms of the significance of mobile phone technology on Ghanaian society, Boateng (2010, 2011) also affirms that operational benefits, that is a reduction of costs are generated when mobile phones are adopted into micro-trade as noted in other global studies (Overå, 2006;

2008; Frempong, 2009; Essegbey & Frempong, 2011; Kwakwa, 2012; Wallace, 2013). His research also showed that mobile phones enable Ghanaian MSEs to link up easily with suppliers and customers to reduce the cost of business transactions and transport and thereby attain good profit margins as well as increased savings.

Boateng's studies (2010, 2011) in Ghana also confirm that the adoption of mobile phones in trade economically empowers, enhanced business networks and helped in trust-building. For instance, his research has shown how mobile phone use by female traders in Ghana improved their businesses and empowered them economically. This augments Molony's (2006) work on Tanzania and Overå's (2006, 2008) studies in Ghana which also show that mobile phone use among micro-traders enabled the building of networks and maintenance of trust. In addition, Gabre-Madhin's (2001) study in an Ethiopian grain market shows how mobile phones enhance social network and trust and enables traders to carry out long-distance transactions. Goodman's (2005) study on ICTs and trust in South Africa and Tanzania also shows how mobile phones are used for strong and weak ties with others outside the community, including traders.

As previously mentioned, the use of mobile phone in micro-trading activities has led to diverse effects on economic or trading activities with Boateng (2010 & 2011) categorising some of these effects into three benefits: operational benefits, that is those that are related to cost reduction; relational benefits: those that are linked to the benefits of improved communication and relationships between the actors involved in a transaction; while strategic benefits are associated with benefits that increase access to markets and the performance of micro-trade. These noted benefits to Boateng generate incremental, transformational and productive effects. The figure below shows Boateng's (2010 & 2011) suggested model of the effect of mobile phone in micro-trading activities.

Figure 3.6 Boateng's suggested model of mobile phone effect on micro-trading activities



Source: Boateng (2010, 2011)[91]

The use of mobile phones in micro-trade, as shown in figure 3.6 improves trading activities. Boateng's (2010, 2011) model of the effect of mobile phones on micro-activities suggests that the improvement in what people already do, such as using mobile phones to improve trading activities, is, in effect, incremental. He further argued that benefits derived from using mobile phones to obtain new opportunities and access to services and support that were not previously available, such as mobile banking, has a transformational effect through the generation of operational, relational and strategic benefits.

Considering the study objective in assessing the effect of the use of mobile phone on informal micro trading activities, focus will fall on Boateng's concepts of "incremental and transformational" to assess the extent to which mobile phone integration in informal micro activities among women traders in Accra has affected the performance of their businesses. The study will also examine the spill over effects of mobile phone use on the performances of their businesses in the social lives of women. This will reveal the perceived effects and role of mobile phones in the economic activities and social lives of wholesale and retail women micro traders in the informal economy of Accra.

[91] This diagram is based on Boateng's (2010/2011) conceptual framework of mobile phone effects on micro-trading activities.

3.5 From digital divide to digital inequality: do mobile phones amplify differences and inequalities in society?

As noted in the preceding discussion, mobile phones are playing a significant role in society and have become important in socio-economic development. In light of this, many Africa countries liberalised their telecommunication sectors and introduced the ICT for development (ICT4D) policies that have resulted in the introduction of mobile phones and associated ICTs into their countries. With this liberalization, and ICT4D policies, mobile phones that were initially restricted to top business male elites have subsequently become more widely available in many African countries. As a result, it is claimed that with respect to access, mobile phones are likely to reduce the gap between the rich and the poor, the educated and uneducated. It is therefore argued here that a difference exists between those who do not have access to mobile phones (physical or technical access with regard to having a mobile handset and getting connected) and those who have. Such a difference between the haves and the have-not is referred to as the "digital divide".

There are many interpretations in the literature about the term "digital divide". Wilson (2006: 300) argues that the digital divide is "an inequality in access, distribution, and use of information and communication technologies between two or more populations". Fuchs and Horak (2008: 101) sees the digital divide as "unequal patterns of material access to, usage capabilities of, benefits from computer-based information and communication technologies that are caused by certain stratification processes that produce classes of winners and losers of the information society, and participation in institutions governing ICTs and society". For Norris (2001), the digital divide is a multidimensional phenomenon which includes a global digital divide, a social divide, and a democratic divide. Global divide encompasses differences among industrialised and lesser developed nations; whereas the difference among those who do and do not use digital technologies to engage and participate in public life is a democratic divide. The disparity between those who can afford a computer and internet access and those who cannot based on income differences is seen as a social divide (Norris, 2001).

Put more simply, the digital divide is just the split between the have and have-nots of new media technology (Hargittai, 2004). This suggests that once one gets access to any of the new ICTs, disparities are reduced; therefore, access is all that matters. What is disputed here is the

notion of reducing the digital divide to material access possibilities; and therefore liberalising economies and opening up of markets that will bring mobile phones and associated ICTs into a country, and then the claim that they will close the gap between people of different classes. This is because disparities are not influenced only by material access but other factors such as structural inequalities (e.g. income and education) play a significant role.

DiMaggio & Haggital (2001:1-2) argue that "this concern about inequality, and about the possibility that new technologies like mobile phone[s], might prove to exacerbate inequality rather than ameliorate it, focused on what analysts have called 'the digital divide'; between the online and the offline, the information 'haves' and 'have-nots'. The dichotomous view of the 'digital divide' as a distinction between people who do and do not have Internet access was natural and appropriate at the beginning of the diffusion process". Di Maggio and Hargittai (2001) also argue that as access diffuses to parts of the public who were initially excluded, dimensions related to quality of use become important bases by which the benefits of mobile phones and associated ICTs can be stratified. In this context, they reason that differences or disparities in digital technologies now go beyond material or physical access to differences in use of mobile phones and associated ICTs owned. Patterson & Wilson (2000) and DiMaggio & Hargittai (2001) also observe that as ICT diffuses to inner-city communities, quality of use becomes an important aspect by which the benefits of the technology are stratified and hence unequally distributed.

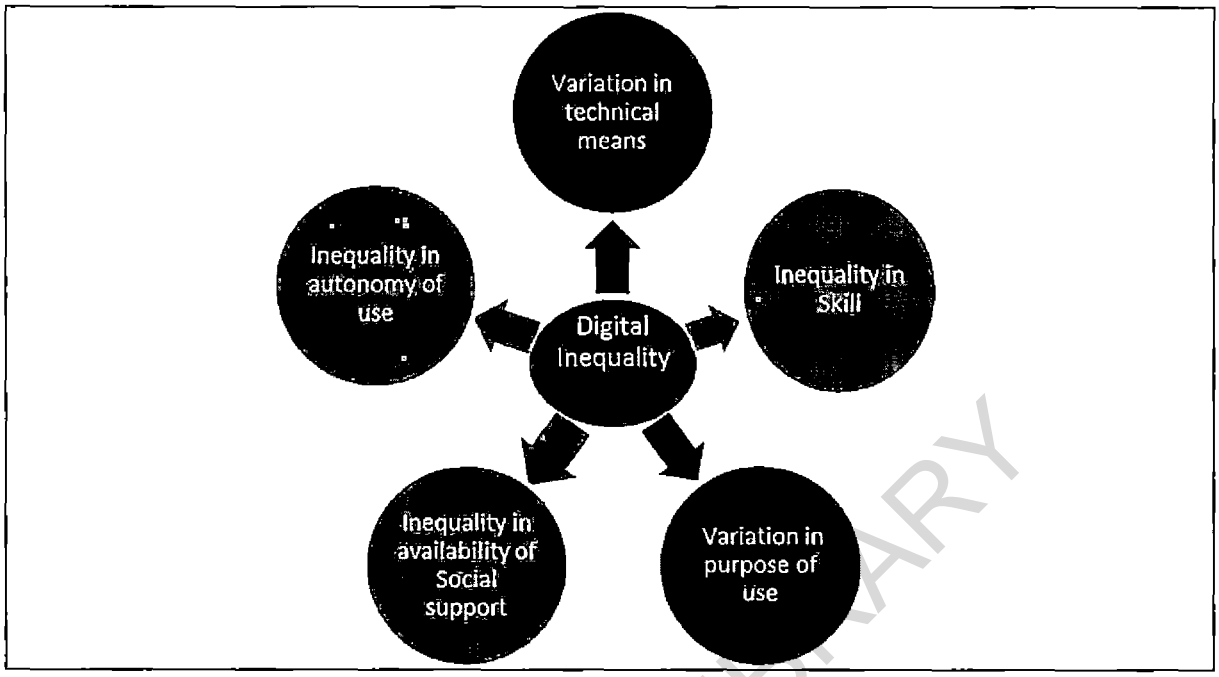
There is, therefore, a need to refine the understanding of the term digital divide to consider the quality of use of a technology. DiMaggio and Hargittai (2001) suggested the term "digital inequality" and they argued that the term is useful to explore the historical patterns of social stratification that result in the unequal access to and use of mobile phones and associated ICTs. In other words, they coined the term because differences and exclusions with respect to digital technologies are not simply a matter of material access. This is because inequality in access has declined, in the sense that mobile phones have become widespread and part of everyday lives of most people. The prevalence of mobile phones has enabled access to all who were formally excluded to be included. Differences in terms of quality-of-use have therefore become an important basis on which the technology tends to stratify society. In other words, quality-of-use should be the focus in assessing inequality, not just physical access to or quantity of mobile handsets. This suggests that even though the prevalence of mobile phone (i.e. physical ownership to mobile handsets -material access) is bridging the

conceptualisation of formal and informal economy interconnectedness as noted earlier (with reference to Accra), differences in classes of people will tend to create inequalities as quality of use (following DiMaggio and Hargittai's conceptualisation and suggestion which I tend to agree with) is used in assessing the digital divide. For this reason assessing the quality of use of mobile phones will tend to be associated with structural inequalities such as education.

Geser (2004: 6) argues that even though mobile phones have become prevalent, "they may still accentuate social inequalities in so far as their factual usage patterns are correlated with various purposes of social actions and with different situations, social relationships and social roles". In this context, differences in access and quality of use of mobile phones, namely, digital inequality, become the important basis to measure any differences and disparity among users. Hargittai (2003:9) therefore, argued that the term digital inequality– "better encompasses the various dimensions along which differences will exist even after access to the medium is nearly universal". Other scholars (Mossberger et al., 2003; Van Dijk, 2005; Barzilai-Nahon, 2006; Hargittai & Hinnant, 2008) also argue that there is a need to redefine the approaches of studying the digital divide, thus there should be a move from a binary classification of users versus non-users to explore more about the uses in detail to get a deeper understanding of where inequalities may lie.

DiMaggio and Hargittai (2001), in turn argues that digital inequality encompasses five dimensions to measure the access and differences in quality of use –digital inequality - of mobile phones and associated ICTs. These dimensions include: technical means or variation (type of mobile phone network owned), the autonomy of use, digital literacy and skills relating to education and age, the social support or assistance received and dimension of purpose in use. The figure below shows DiMaggio and Hargittai's (2001) suggested dimensions to measure the access and differences in quality of use – digital inequality.

Figure 3.7 DiMaggio & Hargittai (2001) suggested dimensions of digital inequality



Source: DiMaggio and Hargittai 2001[92]

As shown in figure 3.7, the first dimension relates to technical inequality. The disparity or inequality associated with technical aspects gives the user the opportunity to access a wide range of mobile services due to the advancement in mobile phone networks over the years (as discussed above). In light of this, the type of mobile phone networks that a user has access to, determines the type of applications and services that can be used. For instance a mobile phone user with IG mobile phone will benefit only from voice calls whereas a user with 3G will enjoy further benefits such as video calls, internet access, and so on. In other words, the use of less sophisticated mobile services such as 1G reduces the benefits one gains from mobile phones. DiMaggio and Hargittai (2001) argue that the inequality or variation in technology refers to the differences in equipment quality and the availability of connections by which one accesses the web. To Kling (1998), technical inequality refers to the connectivity and availability of means of connecting to the internet via mobile phones. Kling (1998), therefore, differentiates between technological and social access, by pointing out the importance of the physical availability of suitable equipment including processing power and appropriate software. This, therefore, suggests that differences in the quality of the hardware, software and connections may limit the ways in which different mobile phone users can

[92] This diagram is based on DiMaggio and Hargittai's (2001) suggested dimensions of digital inequality.

employ the mobile services like the internet. For instance, can a mobile user's hardware, software, and connections support java applications, sophisticated graphics and streaming video contained in many websites? Therefore, material or technical access is not a suitable measure of difference in the uses of a mobile phone. This is because the type of mobile phone networks and software play a significant role. Nonetheless, Van Dijk and Hacker (2003) refer to technical access–or access or lack of access to computers and network connectivity– and claim that technical access can solve information inequality.

The second dimension is the degree of autonomy of use, in other words the freedom to use technology for one's preferred activities and space. In this sense, Van Dijk & Hacker's (2003) claim is contested by DiMaggio and Hargittai (2001) and Kvasny (2002) who argued that while autonomy of use is related to technical means in terms of what a user enjoys when using the technology like a mobile phone, it also represents digital inequalities. This is because the benefit attained from the possession of a technology such as mobile phones is closely related to the user's ability to experiment and explore the technology effectively (Kvasny, 2002). However, here it becomes clear that a lack of education attainment can restrict use of the technology. Those with higher educational achievements will benefit more by accessing mobile phone applications such as the internet and will be able to browse for information; store and process data; unlike someone with a low educational attainment because such applications involve digital and information literacy among other skills. According to the United States National Forum (n.d) information literacy is "the ability to know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand". To Horton (2007: 53) this "means the set of skills, attitudes and knowledge necessary to know when information is needed to help solve a problem or make a decision, how to articulate that information need in searchable terms and language, then search efficiently for the information, retrieve it, interpret and understand it, organize it, evaluate its credibility and authenticity, assess its relevance, communicate it to others if necessary then utilize it to accomplish bottom-line purposes".

The third dimension, inequality in skills – which is also associated with educational differences - plays a significant role. Stiakakis et al. (2010) argue that undeniably English (for example, in countries like Ghana) is the language of the internet. English is the official language in Ghana and the medium of instruction in schools. The English language has

therefore grown rapidly in the country to become a formidable force in social interaction and in all dialogues relating to democratic practice and governance as well as a source of debate among academicians, policy makers and politicians (Adika, 2012). In this context Ghanaians who lack basic language literacy: the ability to read and write in English owing to low formal education level will have a great difficulty in using the internet. This suggests that formal education and literacy (in English) play a significance role in digital skills. Therefore, the higher the level of one's education, the higher the possibility one is able to explore a technology. Educational differences therefore have a role in digital inequalities.

DiMaggio and Hargittai (2001) further argue that inequality in skills (the know-how of using technology effectively in finding information, storing data and so on) is significant in measuring disparities among mobile phone users. Van Dijk and Hacker (2003), however, believe that inequality in skills is of three forms: informational skills (the skills to search for information and process it); instrumental skills (the ability to operate software [equipment]); and strategic skills (the use of information for one's own purposes and position). Van Dijk (2006:181) affirms that information skills and strategic skills are ''extremely unevenly divided among the populations of both developing and developed societies''.

It has been argued that inequality in skills will not diminish even with material access because education and income play a role in skills access (Van Dijk & Hacker, 2003). This is because people with high levels of education and income will tend to use significantly more of the mobile services on offer than people with low levels of education and income who will simply explore the basic functions of mobile phones.

In this third dimension, age is also said to play a role. Van Dijk and Hacker (2003) recognise that the combination of instrumental and informational skills is "informacy" which is not related to education levels but to age and gender. Meso et al. (2005) also add that educational achievement in addition to gender and age are factors that determine the use of mobile phones and associated ICTs. Age then can be said to be a dimension in the access and use of mobile phone technology. Other studies (namely, Dunn & Dunn, 2006)[93] have shown that (older) adults have fewer uses for their mobile phones, so they use their mobile phones in a minimal way such as for calling and texting while younger people make much more use of

[93]This study was done in the Caribbean.

their mobile phones as they use features such as the camera, games, and so on, in addition to the basic functions. In exploring other mobile services beyond the function of voice communication, some researchers (Dunn & Dunn, 2006; Boateng, 2010[94]) have shown that older people (adults) sought the assistance of their children in using their mobile phones. This suggests that children have more knowledge in the use of mobile phones.

Zubieta (2010) augments the argument with recognition that there are those who were born in the computer era: the 'digital natives' and those who had to make an effort to overcome the transition into the current digital age: the 'digital migrants. The term 'digital native' was given currency by Prensky (2001)[95] who argues that all young people who have grown up since the widespread availability of the personal computer can be considered digital natives, and, by elimination, all older people are digital immigrants. In other words, Bennet (2012) refers to digital native as individuals who have grown up immersed in digital technology and who are technologically adept and interested; whereas digital immigrant are those who having been exposed to digital technology later in life are fearful of it, mistrustful and lack the skills to use technology adeptly. Other labels such as 'Net Generation' or 'Generation Y' have been used refer to those who grew up with computers and who are knowledgeable in digital technology (Koutras, 2006; Bennet, 2012). Bennet (2012) claims that digital "immigrants" (migrants) are considered to be less technically able than digital natives as they can never develop the same level of technology skills and knowledge. This suggests that there are associated disparities among those born during the era of ICTS and those who have grown up afterwards. Therefore, younger people in contemporary times will be able to access and explore the advanced mobile service than people who were born before the introduction of mobile phones.

The fourth dimension of digital inequality is social support (assistance in using a technology) according to DiMaggio and Hargittai (2001). Social support is of three kinds: formal technical assistance from persons employed to provide it; technical assistant from friends and family members to whom the user can turn to whenever problems are encountered; and emotional reinforcement from friends, family in the form of commiseration when things go wrong and or positive interest in sharing discoveries when things go right. Social support increases the motivation to use the technology and the extent to which a user could develop

[94] This study was done in Ghana.
[95] In his 2001 article, *Digital Natives, Digital Immigrants*.

his/her own digital competence (DiMaggio & Hargittai, 2001). Due to this, users of mobile phones and associated ICTs who need support will rely on their social networks and people who possess higher education and digital literacy for assistance. Social networks, therefore, becomes paramount for such users to develop their own digital competence and enjoy the benefits of mobile phones. It is against this background that Kvasny (2002) notes that the benefits that one can potentially receive from participating in these networks might come in the form of information, support, guidance, or additional social contacts. Since it is often colleagues, friends, and relatives who provide the information and guidance necessary to learn how to use online networks, social networks is an important factor affecting the use of mobile phone and associated ICTs.

The last dimension of digital inequality mentioned by DiMaggio and Hargittai (2001) is the purpose for which one uses technology. Barzilai-Nahon (2006) reveals that with regard to the dimension of purpose of use, more knowledge or skills are required by the user if the purpose of use is very high. This suggests that, for instance, a user of mobile phone will derive many benefits depending on whether he is able to explore all the services of the mobile phone he owns. The more advanced mobile phone services one owns, the more options one have to choose from, however, the effective use and exploration of these options require digital literacy. This is because a user who is able to explore all the mobile services of his mobile phones like texting, browsing, Facebooking, recording, video and so on, will derive more benefits and satisfaction than a user one who only sends texts.

In short, to sum up, the greater use and benefits from mobile phones is, therefore, dependent upon the type of mobile phone network accessed, the autonomy of use, digital literacy in terms of education and age, the social support or assistance received, and the purpose of use. For these reasons, there will be inequalities between those who rank low on these dimensions and those who do not.

3.6 Conclusion

In this chapter the upsurge of mobile phones in Africa was discussed and it was argued that irrespective of mobile phones leapfrogging fixed telephone landlines in Africa due to their staggering rate of adoption, their effect on development needs to be assessed in terms of the ways they are used. The spread of mobile phones in Ghana was also examined with a focus on the differences in ownership of mobile phones and use of associated ICTs and the pattern

of use of mobile phones among Ghanaians. The developments in mobile phone networks over the years were discussed as more services and applications have been developed such that mobile phones to become increasingly multifunctional at the smartphone end of the spectrum, where they are effectively computers.

The communicative and non-communicative functions or uses of mobile phones and their diverse impacts in the world at large were further examined. In addition, mobile phones and their effect on micro-trade (or markets) were examined.

Also discussed in this chapter are the inequalities of the digital divide and I following and tend to agree with DiMaggio and Hargittai's suggestion of the need to move from physical ownership (material access) to differences in use — quality of use —in assessing the digital divide, focus will be made on DiMaggio and Hargittai's (2001) dimensions of digital inequality as a means of exploring the differences in the access and use of mobile phones for this research.

To meet the objectives of the study a case study approach was used by drawing data from interviews at the sole proprietor enterprises of female traders in Makola, Agbogbloshie, Madina and Kaneshie Markets in Accra. The next chapter presents the research design and the methods used in this study.

CHAPTER FOUR

RESEARCH DESIGN AND METHODS

4.1 Introduction

In any research work, the research design and methods constitute the platform on which the whole study is grounded. It is therefore important to be clear to the reader about the research design chosen, methods used in data gathering as well as to provide some background to the study to enable the reader to comprehend the trajectory of the study.

This chapter discusses the processes involved during the three years of the study, that is, from January 2012 to December 2014. The fieldwork component of this project lasted for five months, from January 2013 to May 2013. In this chapter I describe the key facets of the research background, including Accra and the four major markets selected for the study. I also discuss how I navigated the politics of studying the women traders, who are imbued with their own subjectivity and frames of knowing and meaning making. I organise this chapter using the notions of social constructionism and reflexivity as my point of departure, drawing on the work of Bryman (2008) among other scholars. I show how these works feed into my choice of a multi-sited case study and present my research design and data gathering methods as well as the methods used in analysing the data from the field.

4.2 Situating the research in context

As noted the headquarters of all the mobile phone network providers are located in Accra and mobile phones appear to be the predominant ICTs owned among the population in Accra with a higher proportion of mobile ownership found among women. As previously mentioned, the 2010 census shows that a relatively higher proportion of households in Greater Accra own either laptops or desktop computers (16.8%) and ownership of mobile phones by individuals is much higher in Greater Accra (73.5%) than the other regions. It is also noted that the proportion of women (28.8%) who own mobile phones is higher than men (25.9).[96] Considering the research aim of assessing the role of mobile phones in micro-trading activities among women traders, Accra becomes a suitable place to be chosen for the study. My choice of Accra is influenced by the fact that the population of mobile phone owners

[96]Ghana Statistical Service (2013c).

predominates in Accra with a higher proportion being women. In addition I am a Ghanaian born in the city of Accra and can easily communicate in the two main local languages (Ga and Twi) spoken there. I reside in the central city, have adequate knowledge of Accra and can easily access places such as the markets and interact with women traders and gather data to meet my research goals.

As also noted previously the 2010 census data shows that more than half (51.1%) of the employed females in Accra are service and sales workers, with a significant proportion engaged in wholesale and retail trade (31.6%)[97] and with women predominating in this sector. Anecdotal evidence suggests that the city day-time population could exceed three million and most of the inflows originate from the city's outlying towns and villages and consist of people who converge in the city centre to participate in trading activities (Asiedu & Agyei-Mensah, 2008). As noted earlier in chapter two trading in Ghana commenced along the coast of Accra by the colonialists and since then women have played a leading role in trading in the country. The role of women in Ghana's trade therefore cannot be overlooked. Women contribute to the provision of labour on the farm lands, harvesting the crops and carting the goods to the markets and are responsible for the distribution of the goods to wholesalers and retailers in many markets in Ghana. They also contribute in getting the goods to the homes of the final consumer.

Women traders in Accra, and specifically those involved in wholesale and retail, were chosen for this study. This is the employment context in which I have chosen to develop my interest in ICTs and particularly mobile phones. Although these women are perceived to be semi-literate or illiterate, most of them have access to mobile phones and it is therefore interesting for me to know how these women acquire technological know-how to use their mobile phones and how these phones affect their informal trading activities.

It is also interesting to explore how the mobile phone – predominantly a product of the formal economy – has affected the informal economy and what this means for the debate on the conceptualisation of the formal/informal economy. This issue will be revisited in the final chapter.

[97]Ghana Statistical Service (2012).

4.2.1 The structure of Ghanaian markets and their trading activities

In Ghana each region has its major markets and these serve as repositories for goods which form the basis of the staple food needed to make a complete dish in every Ghanaian home (Asante, 2011). Most markets in Ghana operate almost daily with special days known as markets days on which goods are usually brought into the market by wholesalers. Each market is noted for its wholesale and retail trade. Hawking[98], that is the selling of goods (all types such as bread, sachet water, dried fish, cooked food etc;) by moving from one place to another in the market, is also a feature of markets in Ghana. In Ghanaian markets traders are categorised based on the goods or commodity they trade in, thus creating sub-markets or sections within the market. Overå (2006) argues that to be able to make – or at least not lose – money on each transaction or "link" in the commodity chain, traders establish networks of colleagues trading in the same commodity.

Most markets in Ghana are open air, tend to be congested and give an appearance of intense activity. It therefore seems a chaotic and noisy scene to the uninformed observer (Owusu & Lund, 2004). Buyers and sellers can be seen haggling over prices while other traders shout at top of their voices, seeking to attract passers-by to purchase their goods. Goods sold are displayed in all kinds of ways, and some even on sacks or bare ground. Ghanaian markets are unique compared to other countries. In Ghanaian markets all types of goods are sold ranging from vegetables, textiles, cosmetics, jewellery, cooked foods, foodstuff, fish, meat, drugs and even mobile phones etc. In principle, market stalls are allocated by the City Council, but in practice these are passed from one hand to the other, or people inherit or rent them and sometimes usurp other people's rights to them (Robertson, 1974). Some traders can also be seen on the pavements surrounding the market place displaying their goods on tables or on the ground. Occasionally these traders on the pavements are chased from these locations by City Council Officials or 'aabae' (meaning "they are coming" in Ga) as they tend to cause congestion that prevent pedestrians from using these walkways or pavements.

The establishment and administration of markets in Ghana are the responsibility of the District Assemblies (DAs). The administration of the markets in carried out by the DAs in conjunction with market queens or 'Ohemaa' (queen mothers and sub-queen mothers) who are heads of the markets and of the various commodities of the trader associations (Lyon,

[98]This is a form of petty trade, involving traders who do not have any permanent stand in the market: they move around carrying their goods on small trays and often on their head.

2003; Owusu & Lund, 2004). These (sub) queen mothers come together to form the executive committee of Greater Accra Markets Association. The Greater Accra Market Association is the main body that coordinates the activities of traders in all the Accra markets (President of the Greater Accra Market Association, personal communication, 2013). Queen mothers or 'Ohemaa' are chosen on the basis of personal qualities such as age, familiarity with the market, conflict negotiation skills and dispute settlement among others (Lyon, 2003; Owusu & Lund, 2004; Clarke, 2010). Market leaders of the Ghanaian markets are mostly women because women predominate in the markets.

Women traders have organised themselves into associations based on the commodities they trade, so as to protect their commercial interests and express their grievances (Clarke, 1994). But these associations are weak (Dejene, 2007) because membership in these associations is optional. However, the role of traders association is very important in the smooth running of marketplaces. Even though the DAs are responsible for the basic structures of the market, the informal and unwritten rules of the associations govern the day-to-day behaviour and activities of traders. Also the association act as conduits through which the grievances and needs of traders are made known to the DAs (Owusu & Lund, 2004).

In Ghanaian markets, both men and women are involved in trade however women predominate in the sale of most commodities ranging from vegetables, foodstuffs, clothes, textiles etc. The exception is the sale of meat, chicken and mobile phones, where men predominate in most major markets. Men predominate in the sale of meat because it involves butchering and cutting which is often seen as men's work. Traders either go directly to the farms where the vegetables are cultivated or buy from farmers who transport the commodities to the major markets.

Men are also the ones who off-load goods that are brought from hinterlands or farmlands by farmers or suppliers for distribution in the market. These goods are sometimes offloaded using small kinds of trucks. In most Ghanaian markets all open spaces surrounding the market and streets (or pavements) in the area are densely lined with shops, self–provisioned stalls, and hawkers who have no legal tenure. Regardless of their tenure status, most traders pay an annual municipal licence fee or daily toll to the DA officials. There are however traders who never pay their daily toll because they escape the authorities whenever they come to collect such tolls.

As mentioned earlier on, in Ghana there are categories of traders that can be identified according to the type and scale of activities performed in the distribution chain: First are the wholesalers, or travellers who Clark (1994) calls itinerant traders traveling to buy (perishable) goods in the rural areas or purchase their goods from farmlands outside the country. There is also another category of wholesale traders who do not go or travel directly to the farmlands to purchase their goods but purchase goods from farmers or suppliers (in some cases from itinerant traders) that bring the goods directly to the market to sell. In the case of non-perishable goods (e.g. textiles, shoes and other household items), wholesale traders purchase their goods in bulk either by travelling outside the country (e.g. to Togo, Cote D'Ivoire or Dubai) or by purchasing their goods from manufacturing companies within the country and selling them in bulk. The second broad category consists of wholesale-retailers, who sell goods in large quantities to other wholesalers[99] from other markets[100] and or sometimes sell in smaller quantities to retailers. Retailers are the third category of traders, who buy one or several cartons of goods (perishable goods) or quantities of goods (non-perishable goods), which they either retail themselves directly to customers (final consumer) or re-sell in even smaller quantities to petty traders and (street) hawkers– the last broad category[101] of traders (Overå, 2006).

Wholesale (itinerant) traders in this study denote all traders who sell their goods in bulk. Itinerant (wholesale) traders purchase their goods from their suppliers or farmers (in the case of perishable goods). In this study the term "supplier" is used to denote all those from whom goods are purchased. "Retail traders" in this research denotes all those who sell directly to customers (final consumer) or re-sell in even smaller quantities to petty traders and street hawkers. "Customer" in this study denotes all those who buy goods for resale[102], or those who purchase goods for consumption (the final consumer).

As noted early on, in Ghana each region has its major markets. Greater Accra has about forty markets – Odorna, Agbogbloshie, Mallam, Osu Night Market, Kaneshie, Makola, Mallam Atta, Kantamanto, Dodowa and Madina, among others – but Agbogbloshie, Kaneshie, Madina and Makola are the four well-known major markets. Women predominate in these

[99]These are often wholesale traders who do not travel to purchase their goods.
[100]These wholesalers are from mini or small markets in Accra, e.g. Kaneshie and Odorna markets.
[101]This is the fourth category of traders in the trading hierarchy.
[102]For wholesale traders their customers are the retailers. For retailers they often refer to the final consumer as their customers.

markets[103]. Also in these four major markets, women predominate in the sale of vegetables and textiles. [104] Women in vegetable and textile trade in these four major markets were thus chosen considering the study aim of assessing the effect of mobile phones on women traders in Accra. A detailed profile of the four major markets is provided in the next section.

4.2.1.1 Makola Market

Makola market[105] was market built in 1924 to replace the Salaga market (Robertson, 1983). It is located in the central business district of Accra[106] and it is bordered on the South-East by old Accra; James town and Ussher town. It is one of the most well- known markets in Greater Accra region and it is highly chaotic and congested, characterized by traffic jams and street hawking. Traders can be seen selling on the ground or on tables and in surrounding sheds which have no formal tenure. It is the predominant market for wholesale and retail trade in global consumer items in the country and attracts business from citizens as well as foreigners from all over the world (Robertson, 1983; Darkwah, 2002). This is because all types of goods or commodity can be purchased from the market, ranging from foodstuff, vegetables, household items, etc. but the predominant commodity sold is textiles. In the textile section of the market, there are women who are involved in sewing of these cloths (textiles) based upon the request of customers. Darkwah (2002) notes that goods sold in this market are both locally manufactured and imported.

In 1979, Makola[107] market, the queen of Accra markets was destroyed when the Armed Forces Revolutionary Council (AFRC), the military junta that seized political power in 1979, had the market razed to the ground (Robertson 1983). The destruction of Makola market led to hardships for many traders and disruptions in their livelihoods and their ability to support their households. Some traders never recovered sufficiently to resume trade in the market. However with the adoption of the structural adjustment programme (SAP) and the introduction of trade liberalisation, a new Makola market was opened in December 1986, and an annex was added in May 1987 (Darkwah, 2002; Awumbila et al; 2011).

[103] Men predominate in one of the markets in Accra, that is 'Katamanto' market where second hand items particularly clothing and shoes are sold. This market though well -known was not chosen because the study interest and focus is on women.
[104]Being Accra born and based on my frequent visits to the markets as well as on a preliminary survey, I realized that women predominate in the sale of vegetables and textile in these markets.
[105] This market is also known as 'Makola Number One' or 'The 31st December Market'.
[106]See map on page xi.
[107]This market was known as Selwyn market at that time (Inside watch Africa, 2012).

The story of Makola, can be traced back to the late nineteenth century. It is a cumulative tale of the resettlement and migration of two different ancestral lineages born out of varying intentions but with crossed purpose. The first of them named Chief Braimah came from Ilorin in Nigeria with his family to settle in Accra after a chieftaincy dispute that led to his banishment from his hometown (Inside watch Africa, 2012).

The establishment of Makola market itself can be attributed to two major activities that the Braimah family engaged in. Chief Braimah established a meat business due to large number of cattle he owned. His two wives also engaged in a 'kola nut'[108] petty trading business. As the years passed by other women from Nigeria joined these two women. From these two major business (meat and Kola nut), a market gradually developed (first named London market, then Selwyn and then Salaga market) and over the years grew to what we have today (called Makola market)[109] (Inside watch Africa, 2012).

There are several contradictory reports of the origin of the name 'Makola', however one version stands above all others. Chief Braimah and his family resettled on another piece of land because the British colonists acquired the land he occupied. The story goes on to say that the British colonists had problems with the Ashanti Kingdoms and therefore enlisted six hundred natives into a police regiment for an assignment, however after the completion of the assignment, these regiment were disbanded and the disengaged officers were provided accommodation on the new settlement area of Chief Braimah and his family. These officers contributed to the safety of the area by hunting down snakes and other wild animals that invaded the area. At night these officers would visit the residents[110] of the area and say to them 'ma ko la'[111] which means 'give me fire' (charcoal fire) and overtime the area became known as Makola (Inside watch Africa, 2012).

[108]The Kolanut is a caffeine-containing nut produced by evergreen trees of the genus cola that are native to the tropical rainforests of Africa (Burdock at al. 2009). It is often chewed in many West African cultures, individually or in a group setting. It is also often used ceremonially; presented to chiefs or presented to guests (Igboguide.org, Jarvis, 2002, Kim & Fery, 2005). Kola nuts are an important part of the traditional spiritual practice of culture and religion in West Africa, particularly among Muslims in Niger and Nigeria (Fama, 2004).

[109]In 1924, a storey building was constructed by the town council at the site for a market, leading to the birth of Makola market (Awumbila et al; 2011).

[110] These are the Ga people who were the indigenes of the area (Awumbila et al; 2011).

[111] This literally means 'I will take fire' in Ga.

4.2.1. 2 Agbogbloshie Market

Agbogbloshie is a suburb of Accra and a former wetland surrounded by a river called 'Odaw River' and is home to the world's largest electronic-waste dumping site (The Guardian, 2014). The name 'Agbogbloshie' originated from the river god known as 'Agbogblo' which was believed to be located in the area where the market was established. In the early 1990s when the Makola market was engulfed by fire, Makola was divided into two parts, Makola number one and Makola number two[112]. The resulting relocation of traders from Makola market in the 1990s resulted in the development of Agbogbloshie market. Most of the previous traders of Makola could not go back after the reconstruction because the new stalls built at Makola market were bigger and more expensive and they could not afford to purchase or rent them (Inside watch Africa, 2012).

Agbogbloshie has since become one of major markets in Accra, and serves as a major repository of Accra's foodstuff and vegetables, ranging from essential ingredients needed to prepare a sauce in a Ghanaian home to those rich in carbohydrates (Asante, 2011). It is predominantly a wholesale market and traders sell their goods either through wholesale or retail. All types of commodities can be purchased in this market. However, the most visible commodity traded in is vegetables.

In this market, women traders predominate in the sale of vegetables, except for onions which is mainly the business of men (who are predominantly from Niger and Mali). Traders in this market are categorised according to the kind of product they trade in. In this regard the Agbogbloshie market is divided into sub market sections. Thus we have the vegetables sub market section and foodstuffs[113] sub market section. Hawking is also a feature of this market and traders particularly retailers display or sell their goods on the ground or on tables and in surrounding sheds which have no formal tenure. The market is also characterised with high congestion of traffic jams.

4.2.1. 3 Madina Market

Madina Township is a suburb located about ten miles north east of Accra. The Madina market was developed by the Ga District Assembly with support from international donors within the framework of the government's village market development strategy. The

[112]This market is located adjacent to Agbogbloshie market.
[113]Refers to goods such as plantain, cassava, yam, maize etc;

objective was to upgrade physical infrastructure and – more recently – to improve revenue collection, refuse removal, security and general environmental health. On Saturdays, it acts as a regional market (Lyons & Snoxell, 2005).

The main buildings of the market surround a forecourt for parking and access, a rear court and a courtyard with two floors of concrete-frame and block-built shops. The courtyard contains roofed open trading shelters. The shops and sheltered spaces have been allocated by the municipality on long leases and some have been sub-let. The rear courtyard and forecourt house self-provisioning hawkers or traders selling on tables. These are self-provisioned and have no formal tenure status. Also, there are some self-provisioned stalls, shops and hawkers that are densely lined up on all streets surrounding the market and on open spaces in the area which have no legal tenure. Regardless of their tenure status, most traders pay an annual municipal licence fee or daily toll. In a 2005 preliminary survey, approximately 2200 traders were counted in the market and its immediate vicinity (Lyons & Snoxell, 2005). The goods traded in this market are foodstuffs, vegetables, textiles and mobile phones. Men predominate in the sale of meat and mobile phones in this market.

The name Madina originates from Arabic word 'Medina' which means town. The town was founded on 14 June, 1959 under the leadership of Alhaji Seidu Kardo who named the area, based on the approval of Chief of La Nii Anyetei[114], after buying that land when he returned from Mecca. The city of Medina in Saudi Arabia is the burial place of Mohammed. The name of the area 'Medina' was renamed 'Madina' due to objections to the name in some quarters being perceived as of muslim origin by the residents and as a concession to local feelings, the spelling "Madina' was adopted instead of 'Medina'[115] (Dakubu, 1997).

4.2. 1. 4 Kaneshie Market

Kaneshie, a suburb of Accra, is located just outside the main city centre on a major highway. The name 'Kaneshie', a Ga word, literally means 'under the lamp' marking its beginning as a night market (Dakubu, 1997). The Kaneshie market caters largely for traders from the Central

[114]La is a suburb of Accra. The Land of Madina was the property of the La community, Alhaji Kardo bought the land from the then Chief of La, Nii Anyetei.
[115]The spelling 'Medina' was perceived to be of Muslim origin, thus the spelling 'Madina' was adopted to distinguish the township from the city in Saudi Arabia.

and Western Regions of the country. The area is very well served with numerous shops and banks.

This market is unique among all the markets in Accra because it is referred to as a complex. In 1972, the Government of Ghana charged the National Investment Bank and other financial institutions to assist in building the market into a complex replacing the old single storey building. The complex was thus commissioned in 1979 and was made of three floors (Dakubu, 1997, Ghana place names.com). Although foodstuff and vegetables are the predominant goods sold in this market, all types of goods can be purchased. However on each floor a particular commodity predominates. The ground floor is where food stuffs, fish and vegetables are mainly sold. On this same floor is a section where meat is sold and this is predominantly sold by men. Household items are mainly sold on the first floor. The second floor is where provisions[116] are traded and the last floor is where textiles are traded, as well as sewing of clothes done. Kaneshie market is predominantly a retail market.

As is a common feature of all Ghanaian markets, this market is also congested with people and traffic jams and densely populated with traders and hawkers. Hawkers and traders line up in all open spaces and streets surrounding the market.

Market places are sites for the exchange of goods and services as well as information (Overå, 1998). As discussed in chapter three, the prevalence of mobile phones has led to a significant number of studies (e.g Donner, 2004; Abraham, 2007; Molony, 2009) which show that mobile phones are playing a significant role in micro-trade, particularly with regard to the exchange of information. Women micro traders specifically market women have not been exempted from the adoption of mobile phones into their business activities, suggesting that market women have not been left out from the technological advancement of the 21st century. With these market women becoming part of the technological advancement of the 21st century, it was of interest to me to know how these women traders are using their mobile phones and what role mobile phones play in their micro-trading activities and lives.

It is argued that what mobile phones are depends on the meanings that people construct and associate them with (Ling & Donner, 2009). It is also argued that 'there is no fixed thing called a cell [mobile] phone... (Horst & Miller, 2007: 7) but people's interactions with technologies over time develop myriads of changing constructions, strategies and locally

[116]These are items such as cereals, milo, teabags, sugar, canned fish/meat and milk, biscuits, noodles, spaghetti/pasta etc.

relevant meanings.' Thus, one cannot understand what a mobile phone "is" without sufficient attention to social context and to the actors within that context (Ling & Donner, 2009:19). This suggests that despite the availability of mobile phones, what mobile phones are depends on the way or pattern of use to the user and such patterns of use dependent on the user and context of use. This suggests that when assessing the usage and effect of mobile phones among informal women micro traders, one needs to understand these women based on the views and meanings (constructions) they have of mobile phones. This calls for situating this study within an appropriate paradigm to be able to meet the research goals. I therefore find social constructionism or constructivism approach as the best paradigm to situate this study.

4.3 Situating the study within a paradigm: social constructionism/constructivism, and reflexivity

"Social constructionism" covers a range of positions that have come to be articulated since the term was popularised by Peter Berger and Thomas Luckmann's (1966) book '*The Social Construction of Reality.* A substantively, methodologically, and theoretically diverse array of scholars have conducted research under the general rubric of social constructionism (Harris, 2010). Some scholars (e.g Harris, 2010) distinguish the concepts of interpretive social constructionism and objective social constructionism and in some cases, social constructionism has been used synonymous or interchangeably with the idea or notion of social constructivism.

According to Bryman (2008) social constructionism is an approach that focuses on how social phenomena are continually being accomplished by social actors. The social world and its categories are not only built up and constituted in and through interaction but they are in a constant state of revision. Bryman (2008) further explains that social constructs are categories people employ in helping them to understand the natural and social world. This therefore speaks to the notion that the social world is the outcome of interactions between individuals rather than a phenomenon 'out there' and separate from those involved in its construction. Social constructionism therefore enables the researcher to consider ways in which the social world is the on-going accomplishment of research participants on how the social world of participants come to be what it is through a close study of interaction in different contexts rather than something external to them and which totally constrains them.

Flick (2007) notes that social constructivism, which is sometimes used interchangeable with social constructionism, focuses on the world we experience which arises from multiple socially constructed realities and these constructions are created because humans want to make sense of their experiences. This argument corresponds with the relativist ontology which stresses the diversity of interpretations that could be generated from people's account of the world. It argues that no foundational reality should hinder the possible ways in which the accounts of events such as the use of mobile phones for trading could be described. This demonstrates the view held by the advocates of the social constructivist approach that the knower cannot under any circumstances attain knowledge of a reality that is independent of the knower (Rorty, 1991; Edwards, 1997; Gergen & Gergen, 2003). Constructivists believe that interpretive understanding (verstehen) should be employed in analysing social action and therefore agree with Weber's notion that interpreting the social world involves physical entities but the meanings given to these entities are significant (Ruggie, 1998).

Hammersley (1992) argues that the choice of one methodology over another involves trade-offs. However, the nature of the social phenomenon under study influences the methodological position adopted (Morgan & Smircich, 1980). This study being a qualitative study will situate itself within the constructivist philosophy and share in the constructivist epistemological position which holds that 'all knowledge, and therefore all meaningful reality as such, is contingent upon human practices, being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context' (Crotty, 1998:42). This argument corresponds with Bryman's (2008) comments on interpretivist epistemology which stresses that the social world is understood through an examination of the interpretation of that world by its participants. This shows that to understand any social world, is based on or derived from the interpretations generated from people's accounts of that social world. The association women traders have with their mobile phones and the way they use their mobile phones can therefore be understood based on the accounts they give on how they use them. In line with Bryman's and Crotty's arguments I find it appropriate to situate this study within a constructivist epistemological philosophy because it will enable me to understand women traders and their 'social and business world' as they give accounts (via interviews) on how they use their mobile phones. This study also involves qualitative research aimed at probing for deeper understanding and differences in the usage pattern of mobile phones among women micro traders.

It is also argued that the effects of mobile phones and associated Information and Communication Technologies (ICTs) are largely a social construction and depend on the understanding of people, their drives, knowledge, structures and social interactions (Adam & Wood, 1999). Fischer (1992) also argues that using social constructivism best equips one to take into account the various ways in which technologies have actually incorporated into the lives of the users. This will therefore have the potential to provide insightful knowledge of how women traders acquired the technological know-how to use the mobile phone.

In attempting to understand the 'business and social world'[117] of women traders in relation to their mobile phones, the researcher's position is relevant because it may impact the research. Bradbury-Jones (2007), Padgett (2008) and Berger (2013) argue that aspects of the researcher's position that are relevant to the study include personal characteristics, such as gender, age, personal experiences, beliefs, theoretical, political and ideological stances, and emotional responses to participants. It has been noted that these positions can affect access to the 'field' because respondents may be more willing to share their experiences with a researcher whom they perceive as sympathetic to their situation (De Tona, 2006). In other words, these positions may also shape the nature of the researcher-researched relationship, which, in turn, affects the information that participants are willing to share. Finally, the worldview and background of the researcher affects the way in which he or she constructs the world, uses language, poses questions, and chooses the lens for filtering the information gathered from participants and making meaning of it, and thus may shape the findings and conclusions of the study (Kacen & Chaitin, 2006). This then calls for the use of reflexivity to monitor the tension between the involvement and detachment of the researcher and the researched as a means to enhance the rigor of the study and its ethics (Pillow, 2003; Bradbury-Jones, 2007).

Pillow (2003) states that "reflexivity is situating the researcher as non-exploitative and compassionate toward the research subjects" thus helping to address concerns regarding negative effects of power in researcher–researched relationships. Frisina (2006) and Josselson (2007) therefore remark that reflexivity helps maintain the ethics of the relationship between the researcher and researched by 'decolonizing' the discourse of the 'other' and ensuring that while interpretation of findings is always done through the eyes and cultural standards of the researcher, the effects of the latter on the research process are monitored. For

[117]This simply refers to the trading (economic) activities and their perceived effects on the social activities of women traders.

this reason it is noted that reflexivity is therefore crucial throughout all phases of the research process, including the formulation of a research question, collection and analysis of data, and drawing of conclusions (Bradbury-Jones, 2007).

Bourdieu (1996) also argues that the researcher is endowed with practical mastery and symbolic mastery. For Riach (2009:359) practical mastery focus on "implicit and pre-reflective feel for the game" while symbolic mastery refers to a level of creative endeavour by the agent to negotiate their way in the field through considering different perspectives concerned with knowing the world. Riach (2009) therefore notes that as researchers we are faced with these two masteries and navigate our ways depending on how the research habitus relates to the field of research. Researchers can therefore adjust and be creative in understanding the social world of their participants.

In line with the above argument on the position of the researcher and reflexivity, I acknowledged my own subjectivity and own cultural context (as a woman and Accra born, although not a trader and not familiar with trading activities)[118]. Although I sought to give the participants a voice I am also conscious of the role of social conditions and my own actions in shaping the parameters of these voices. My discussion from sections 4.5 onwards shows how my reflexivity and habitus was at play as I constructed my field, gathered my data on the 'field' and analysed the data that was generated.

4.4 Problem Statement and Research Questions

As mentioned previously (chapter three) even though mobile phones have become available to all including women in the informal economy, their importance or perceived effect on informal micro trading activities which in turn affect socio-economic development is not clearly known in African countries like Ghana. This is because mobile subscribers are equated to users and the usage data as well as the differences in patterns of use are not clearly known. Also as noted earlier the assessing of the effect and importance of mobile phones is

[118]As a researcher I was studying an unfamiliar group and their work activities, women traders in Accra who are perceived to be 'illiterates' with reference to ICTs. Being thoughtful and aware of myself as being 'literate' in ICTs owing to my education level and interest in ICTs particularly mobile phones, I approach this study from a fresh point of view (as an outsider) by paying attention to what it is to gain access to the 'field' through observation and interviews as I navigate my way through the queen mothers. In doing all these I did not forget the ethics to be observed and rigor in undertaking research.

dependent on the usage data. However not many of these studies have been done in Ghana to specifically focus on the differences in access and use of mobile phones – digital inequality – and assess the effect of mobile phones on informal activities particularly women micro traders and to further explore the perceived spill over of such effect of mobile phones on trading activities onto the lives of these women.

With Ghanaian women joining the mobile phone age by integrating mobile phones into their trading activities, this study fills this conceptual gap by focusing on Ghanaian women informal micro-traders, specifically market women, to assess the differences in access and in use (digital inequality); the effect of mobile phones on the performance of their activities; and to further assess the spill over effects of mobile phones on their business activities into their social lives. The study thus focuses primarily on wholesale and retail women traders in micro- trading activities in the four markets selected in Accra and explores how they use their mobile phones as a potential enabler in their businesses and the effect of mobile phones on the performance of their businesses and lives.

Specifically the study explores the following research questions:

- What types of mobile phone networks and models do market women traders use?
- How did they acquire the technological skills to use the various applications on their mobile phones?
- What are the features and services of the mobile phones that they use in their businesses?
- To what extent do they perceive the effect of mobile phone use on their patterns of doing business?
- To what extent do they perceive a positive impact of mobile phones on their businesses to have affected their social lives?
- How important is the issue of trust with reference to information received via mobile phones from their trading partners and customers?

4.5 Understanding my participants' "business and social world": developing research design and constructing my field

In being creative and able to understand my participants 'business and social world' I opted for a multi-sited[119] case study. In qualitative research, the research methods used are not homogeneous. There are different approaches with varying theoretical and methodological considerations. The fundamental principles of these approaches are to explore, describe and interpret the individual and social experiences of research participants (Smith, 2008). The choice of an approach, design or type of data collection method depends upon the researcher, the researched, research problem and data collected (Radin in Burgess 1982:15). The 'field' is a conceptual space whose boundaries are constantly negotiated and constructed by the ethnographer (researcher) and members (researched) and construction of a field in research entails a lot of engagement with literature and theory (Gupta & Ferguson, 1997). Richards (2009:21) simply defines a field as the social and physical space you are going to be studying.

In undertaking this research my initial data or readings in the form of the literature reviewed enabled me to construct my field. These readings revealed that majority of Ghanaian women are employed in non-agricultural activities in the form of trade and they predominate in market trade (Baden et al; 1994, Overå, 2007; Budlender, 2011) and are concentrated in the urban areas (Ghana Statistical Service, 2012) particularly in Accra, the capital of Ghana. The data also reveal that trading commenced along the coast of Accra (Asiedu & Agyei-Mensah, 2008) and trading activities occur in the central city of Accra mainly in the major markets in Accra. I also noted in the reading that mobile phones and associated information and communication technologies (ICTs) have enhanced trade and have enabled informational challenges be overcome in trade. For instance, Aminuzzaman et al. (2003) study in Bangladesh, Overå's (2006) study in Ghana, Molony's (2006) study in Tanzania, and Jagun et al. (2008) study in Nigeria, show how the use of mobile phones in trading activities has lessens information asymmetries and enhanced trade. Ghanaian market traders are faced with information exchange challenges particularly in transporting their goods to the market in terms of bad or poor road networks, road congestion, unreliable middle men and high transportation cost in involving in their trade therefore have integrated mobile phones into their activities. How these women traders are using their mobile phones to overcome these

[119] I prefer to call it multi-sited because four market sites were chosen for the study.

information exchange challenges; how the integration of mobile phone into their trading activities affected their businesses and social lives; how they acquired technological know-how to use their mobile phones and whether any differences exist in their use of mobile phones was therefore explored.

In exploring into these questions among others I decided to conduct a multi-sited[120] case study that includes four majors markets – Makola, Agbogbloshie, Kaneshie and Madina markets – in the city of Accra. I opted for a case study research design because my research object was inextricably enmeshed in a particular context. This echoes Yin (1984) argument that case studies investigate a contemporary phenomenon within its real-life context when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used. Noor defines case study as '...an empirical enquiry that investigates a contemporary phenomenon within its real life context using multiple sources of evidence' (Noor, 2008:1602). This is supported by Bassey (1999), who emphasises that sufficient data must be collected in order for the researcher to explore significant features of the case under study. Similarly, Robson (1993) refers to the case study as an investigation of a particular contemporary phenomenon within it real life context using multiple sources of evidence. Crowe et al. (2011) adds that the use of a case study provides an in-depth, multi-faceted understanding of a complex issue in its real-life context and for this reason it is sometimes referred to as a "naturalistic" design. The case study approach assumes that 'social reality' is constructed through social interaction, albeit situated in particular contexts and histories, and seeks to identify and describe before trying to analyse and theorise; that is it places description before explanation (Somekh & Lewin, 2011:53). In other words, it seeks to explore what is going on there. I also opted for case study design for this research because apart from it being within the 'social constructivist' perspective of social science, 'though within this perspectives there are variations, especially with respect to the balance to be struck between observation and interview-between the researcher's role and perspective, and that of the participants' (Somekh & Lewin, 2011:54), the focus of my study also matches up with Yin's (1984) views that case studies can be used to explain, explore or describe events or phenomena in the everyday contexts in which they occur.

With my choice of case study, I explore the role of mobile phones among the women traders in the four markets selected within their real life setting and I was able to produce thick

[120]I choose to call it multi-sited because the study was conducted in four sites (markets) in Accra.

descriptions and a deeper understanding of my study participants. This echoes Smith (2008) argument that thick descriptions reveal the thoughts, feelings, intentions and actions of research participants as well as context and structure. This is also in line with Silverman's (2006) argument that what actually occurs in a natural setting can also be analysed. My choice of case study enabled me to seek participants' views on how and why questions regarding the ways they use mobile phones vis-à-vis their business and lives. This research design opted for paved way for me to use triangulation - accessing multiple sources of data such as interviews, reports[121] and field observations to offset the shortcomings inherent in single data collection (Yin 1993). As argued a case study's "unique strength is its ability to deal with a full variety of evidence – documents, artefacts, interviews and observations" (Yin, 2009) and for Maxwell (2005) triangulation allows the researcher to gain broader and more secure understanding of the issues under study. These techniques were employed to enable me to get a deep insight into the experiences of the women traders in relation to how they use their mobile phones and how the use of mobile phones has affected their businesses and lives.

My option for a multi-sited case study that led to the selection of four markets in Accra – (Makola, Agbogbloshie, Kaneshie and Madina markets) in creating my field was to paid attention to markets in different locations, in the central city of Accra and a bit off or outskirts of the city, in order to ascertain any differences (if it exists) and similarities in the use of mobile phones among women traders in these different markets who are engaged in different types of commodities businesses as well as assess differences of the effect of mobile phones in trading in different context (markets). In constructing my field and my participants, I took cognisance of the types of commodities sold in the markets, therefore wholesale and retail women traders chosen for the study were either involved in perishable (vegetables) or non-perishable (textiles) to enable me assess similarities and differences that exist in the ways mobile phones are used among women traders of perishable goods (vegetables) differ from women engaged in non-perishable goods (textiles) businesses.

A multi-sited case study is characterised by movement from one site to another and this made me take cognisance of the differences that I encountered as I moved across the different sites (Marcus, 1995) in my gathering of data. The experiences I encountered were not the same across the four research sites – Makola, Agbogbloshie, Kaneshie and Madina markets – and I had to adapt my approach to gather my data in the different sites.

[121]Ghana Statistical Service Reports (obtained from their website).

4.6 The Gathering of Data for the Study

4.6.1 Getting into the field and preparations

In conducting this study as a full time student at the University of Stellenbosch, I had to travel to Ghana in order to meet my research goals. I left for Ghana in December 2012 and I stayed in the city of Accra, specifically Osu. My stay in Osu enabled me to easily access all four markets selected for the study. My intention was to start the fieldwork in early January, just after the Christmas and New Year celebrations.

Although I was born in Accra and have been to Makola and Agbogbloshie markets many times, and occasionally to the Kaneshie and Madina, I had not gotten much insight into these markets. Therefore, I took the opportunity a few days before Christmas and during the Christmas and New Year celebrations and engaged in exploratory walks into the four major markets which enabled me to observe how traders engage in their trading activities, and to get a clear picture or image of the types of goods or commodities sold, the sections of the market in which these goods can be purchased, and the layout of the markets and the activities that occur there.

During these visits a few days before the Christmas celebrations, trading activities in the markets were intense and traders were busily calling for customers to buy their goods. I occasionally asked for the prices of commodities and engaged in general conversation with the traders. During the visits to the markets I also observed that the main debate or conversation among traders was about the recently held presidential elections in the country and its outcome. With this political debate in the country, I realised that until the president was sworn in and the situation had calmed down, it would not be appropriate to engage in interviews in the market. This is because the main opposition party had sued Ghana's Electoral Commission on the outcome of the election held and the trial of the case was yet to commence. This had generated a concern among citizens about whether the swearing in ceremony of the president-elect would take place or whether there would be an injunction from the court. In this regard, I decided that the appropriate time for fieldwork to commerce would be after the swearing in ceremony of the president on the 7th January 2013.

My decision to gather data in these markets after elections was also influenced by my previous experience of research work, when I worked with World Vision Ghana, just after the 2008/9 elections. The study was on children and their rights, but in this situation participants

were not willing to respond to the questions asked as they associated the study with politics and the elections that had just ended.

Another reason that informed my decision to commence my data gathering in late January was the observation made during my exploratory walks in the markets, that many traders had travelled to their various hometowns just after the Christmas to celebrate the New Year with their families. Thus activities in the market were calm and many of the market stalls were empty.

Given these considerations, my intention to commence my data gathering in early January 2013 had to change. I commenced my primary data collection in late January 2013 and spent five months in Ghana. My data collection ended in May 2013 and I returned to Stellenbosch.

4.6.2 Initial points of contact in the field

As mentioned earlier, queen mothers play an essential role in markets in Ghana. For this reason, I contacted the president of the Greater Accra Market Women's Association who is also a queen mother in Makola and the overseer of all the markets and their queen mothers in Greater Accra. I was able to contact the president as a result of a conversation I had with a colleague of mine when I went to his office to visit upon returning from one of my visits to Madina Market. During the conversation my colleague asked about my study and upon giving him the details, he told me that his company – a research institute – had just completed research with market women in Accra. He therefore had the contact number of the president of the Greater Accra Market Women Association. This was good news because although I could have gone to the president/Queen Mother's office and introduced myself, being introduced by someone he knows and has interacted with made it easier. My colleague gave me the contact number of the president and even called her in my presence to inform her that I would be visiting her office sometime later.

The role of the president of the Greater Accra Market Women's Association was essential – she was the first point of call in the fieldwork. I contacted her through a phone call and we scheduled a day to meet. Upon arrival at her office in Makola market, the president warmly welcomed me and I explained my research in detail to her. In addition I showed her the letter of introduction I had which was written by the Graduate school of University of Stellenbosch and also my student ID. When the president read my letter she was glad to hear of my

research and in my presence called the queen mothers and some of the leaders of the association in the selected markets and informed them about my research. She also gave me the contact numbers of these queen mothers and other leaders. Before I left we promised to get in touch with each other if necessary and I made her aware that I would be back to interview her. However, she informed me of the cultural traditions involved in meeting with market queen mothers, that is taking along a bottle of drink as way of respect and a means of entering into the 'palace' of market queen mothers. I was very grateful for this information which I had no idea about.

The queen mothers of the chosen markets were therefore the first point of contact for selecting participants. With access to the contact numbers of the queen mothers, it was easy to contact the queen mothers of the selected markets for the study and to schedule meetings with them about visiting the markets and gathering my data. On the scheduled day, I met with the queen mothers who all welcomed me warmly and I also adhered to the cultural tradition that has to be performed whenever one when meets with queen mothers. I therefore gave each queen mother I met with a bottle of drink as custom demands.

I explained my research in detail to the queen mothers and they in turn informed the sub-queen mothers of the mini markets that were involved in vegetables and textiles businesses. The sub-queen mothers then informed the women traders in their markets particularly those who fell within the categories of goods about the study. This was done through brief meetings with the women traders and I was introduced to the market women during these meetings. This made the women traders aware of the study and built trust in me as I approached them to conduct my interviews. I approached women traders who were willing to be interviewed and who fell within the categories of the goods or commodities in the markets selected for the study, i.e. - vegetables and textiles. However, some of these traders approached me and volunteered to be interviewed.

4.6.3 *Constructing the Case: Sampling procedure and sample size*

Thompson (1999) argues that sampling in research is very important and is done in order to identify specific groups of people who either possess characteristics or live in circumstances relevant to the social phenomenon being studied as well as to choose participants and generate data which would generate robust, rich and deep levels of understanding. This study explored how wholesale and retail women in micro-trade who are involved in vegetables and

textiles trade use their mobile phones and the role or influence of mobile phones on the performance of their businesses and social lives.

While micro-trading activities, specifically market trade was taken as the outer boundary for the case, the study also refers to the wider contextual boundaries of Accra. I therefore broadly conceptualised my cases at three levels. The first level is the outer boundary for the case, which is wholesale and retail micro –trading in markets. The second level is conceptualised in terms of four sites, the four major markets in Accra, namely the Makola, Agbobloshie, Madina and Kaneshie markets. Within these markets, I focused on wholesale and retail women traders running sole proprietorships[122] and who own mobile phones and are engaged in either perishable (vegetables) or non-perishable (textiles) businesses. These women and their businesses constitute the last level of my case selected for the study.

Although women traders constitute a predefined social group in Ghana and for that matter in Accra, there is no existence of a list or register of women traders who own mobile phones in Accra markets. For this reason and considering the research goal, I selected participants with a specific purpose in my mind. Purposive and snowball sampling in the four major markets was therefore the most practical approach and the most appropriate sampling techniques to select women traders for the study. In light of these women traders who were engaged in perishable goods (vegetables - cabbage, carrots, lettuce, green pepper, cucumber, spring onions, tomatoes, onions and pepper) and non-perishable goods (textiles) were selected and interviewed for the study.

Guest, Bunce and Johnson (2006) explain that in studies in which main goal is to understand common perceptions and experiences among a group of relatively homogenous individuals, twelve interviews should suffice. In line with this assumption, participants in this research were considered relatively homogenous in the sense that they are all female traders in Accra markets, therefore these similarities appear enough to justify a data set of twelve interviews in each of the four market selected. Considering this assumption at least not less than twelve women traders were interviewed in each market selected for the study. In addition twelve queen mothers and leaders of market associations within the selected markets were also interviewed. The queen mothers or leaders interviews include the queen mother or president

[122]Women traders who are self- employed and running their own micro-trading activities in the markets.

of the Greater Accra Market Women's Association. The interviews of the queen mothers or leaders were in three main folds; first I explored into the historical background of their markets and then asked questions about how women traders in their respective markets use their mobile phones for their businesses and the influence of mobile phones on their businesses and social lives. In addition I questioned them on how they, as queen mothers, use their mobile phones in their businesses, and the influence mobile phones have had on their businesses and social lives. In total I conducted seventy two (72) interviews[123] with women traders from the four major markets selected for the study. These took the form of semi-structured conversations in the two local languages (Ga and Twi) spoken in Accra.

The women traders I interviewed were wholesalers or suppliers[124] and or retailers who are either trading in vegetables or textiles. Below is a table showing the number of vegetable and textile wholesale and retail market women interviewed.

Table 4.1 Vegetable and textile wholesale and retail women traders interviewed in the four selected markets.

Conceptual focus	Markets	Vegetable traders		Textile Traders	
		Wholesaler	Retailer	Wholesaler	Retailer
Micro-trading (Informal) in vegetables and textiles	Agbogbloshie	16	2	0	0
	Makola	4	2	4	5
	Kaneshie	2	10	5	6
	Madina	3	4	2	7

As indicated in table 4.1, in the four markets chosen for the study, 29 women traders trading in textiles and 43 women traders engaged in the vegetable trade were interviewed. These figures include the queen mothers of textiles and vegetables and the leaders of the market associations. The number of women traders engaged in vegetables interviewed was higher because Agbogbloshie market is predominantly a vegetable market. Figures for Kaneshie retail traders are also higher because Kaneshie market is predominantly a retail market (as discussed earlier).

[123]A data set of 72 interviews was considered quite adequate for such an explorative qualitative study as transcriptions and analysis were done during the fieldwork. In doing this, interviews were discontinued as no new additional findings were realized as the interviews were being analyzed.

[124]For retailers, wholesalers are referred to as their suppliers.

4.7 Specific Data Gathering Techniques

In order to situate my study within extant knowledge in the academic fields of sociology and information and communication studies, I did a comprehensive literature review which involved readings on women, trade, the informal economy, the perceived effect of mobile phones and digital inequality – and I focused specifically on writings that inform the key questions of my research. This was an iterative and on-going process throughout my study.

I employed interviews and participant observation which enabled me to interact and gain access as well as understanding of the 'business and social world' of my research participants.[125] I conducted two sets of semi-structured interviews with women traders using an interview guide/schedule I constructed which include questions that covered the main objectives of my research. Bryman (2008) argues that in semi-structured interviews, researchers prepare an interview guide which entails a list of questions or fairly specific topics that need to be covered for the study. He however argues that the interviewee has a great deal of leeway in how to reply to the questions and while questions may not follow exactly in the manner outlined in the schedule, by and large all questions should be asked. He adds that questions not included in the guide might be asked as the interviewer picks up on things said by the interviewees (Bryman 2008). Following Bryman's suggestion I was able to ask questions pertaining to my research objective and also addressed non-prepared questions that arose during the interview and observations in the markets. Questions such as the reason why mobile phones were acquired, how women traders attained technological know-how to use their mobile phones, how the use of mobile phones has affected their businesses, and whether they trust information received on mobile phone were among other questions that were asked.

Firstly, I conducted semi-structured interviews with women who were either in wholesale or retail trade from the four major markets selected- Makola, Agbogbloshie, Kaneshie and Madina markets. I interviewed these women traders at their market places as they engaged in their trading activities. The interviews conducted lasted for about forty-five minutes to an hour and half, however, some interview sessions lasted for more than an hour and half as there were interruptions by retailers or customers who the women traders attended to. Even though interview sites provided some distractions in terms of interruptions as traders attended to their customers, answer their mobile phone calls, noise and hawking activities, they also

[125]By virtue of the research goal and the research situated in social construction/constructive paradigm, interviews and observation were considered the appropriate method to be employed.

provided me with the opportunity for participant observation and to experience at first hand some of the ways in which women traders use their mobile phones during their businesses. As noted by Elwood & Martin (2000), interview contexts are highly important for understanding the ways in which knowledge is formed between researchers and researched.

Secondly I conducted key-informant interviews with leaders of the various market trader associations and queen mothers of the entire markets, as well as queen mothers of textiles and vegetables within the selected markets. These interviews were semi-structured which enabled the acquisition of data on how the queen-mothers and leaders use their mobile phones in their businesses and the effect of mobile phones on their businesses.

Semi-structured interviews are flexible and allow for probing and also enabled me to focus on the aims under study (Burgess, 1984). Such interviews also allowed the participants to express themselves and to narrate their experiences freely while focusing on the subject matter under investigation. This in turn enabled further probing questions important to this study to be asked without focus on the key questions under study being lost. In this context, I probed the women traders, queen-mothers and leaders of the respective markets to explain the ways in which they use their mobile phones and the effect of mobile phones on their businesses.

Noting the educational background of women traders, I asked the women traders to choose the local languages (Ga or Twi) that they preferred and felt comfortable in expressing their views, their feelings and experiences when interviewed. Most of the women traders, queen mothers and leaders opted for a local language (Twi or Ga) with the exception of seven traders who opted to speak English. There were twenty three (23) interviews conducted in Twi, forty two (42) in Ga and seven (7) in English[126]. Only in Agbogbloshie market did no woman traders opt to speak English; there were women traders, queen mothers and leaders who were interviewed in English in the other three markets (Makola, Kaneshie and Madina).

I informed participants of my research, and explained why it was being done and obtained their consent before interviews began. All interviews conducted were recorded and photographs of participants' mobile phones were taken with the permission of the participants in order not to lose any vital information and to obtain reliable data for data analysis. I also took some notes during the interviews highlighting the key areas of significance which

[126]Two of these interviews were conducted in a mixture of English and Akan (Twi).

enabled me to analyse my data. Confidentiality was also assured before the commencement of interviews.

In order to understand women traders and their activities as well as augment the data from the interviews I engaged in some participant observation. This entailed the observer-as-participant style, where I was mainly an interviewer and engaged in some observation with little participation. I observed how women traders who sell vegetables undertake their businesses particularly through the use of their mobile phones when their suppliers arrive with the goods. I took the initiative and went to the markets selected at dawn when goods usually are brought by wholesalers/farmers/suppliers or arrive in the markets for the women traders to purchase. I also noticed how men upon arrival off-load the goods from the big trucks as the women looked on and identified which cartons of vegetables belong to them. The wholesale women traders who are able to go to the hinterlands to purchase their goods and return to the markets to sell have placed clothes on their cartons of vegetables for easier identification.

Upon arrival I observed how women traders interact with their retailers or customers who were waiting for their arrival and negotiated prices and sell their goods. I also observed how the women traders used their mobile phones and called other colleague traders, retailers and customers who had not yet arrived in the market, informing them of their arrival with their goods. A few women also called their family to inform them of their safe arrival in the market. The women traders who were either wholesalers and wholesalers who could not make it to the hinterlands to purchase their goods also made or received calls as they waited for the arrival of the goods to the market. Through this observation, I was able to gain much insight into how women traders use their mobile phones for their trading activities. Below is a picture of an observation scene in Agbogblshie market.

Figure 4.1 An Observation Scene in Agbogbloshie Market

A wholesale woman trader making a call during the arrival of goods at Agbogbloshie market.

My engagement in participant observation was facilitated by the fact that I am a Ghanaian who is competent in the two main local languages (Ga and Twi) spoken in the area. This enabled me to easily understand the actions of the women traders as they used their mobile phones for their activities without the need for translators. A camera, digital recorder and field notebooks were used to gather and to store data with the informed consent of the participants during the observation and this allowed for the relative ease of transcribing and analysing the data.

4.8 Field experiences: some enthralling and difficult moments in the field

In this research process, I had both exciting and sticky moments during my fieldwork. These moments vary as I gathered data across my four sites. On the very first day I went to meet some of the queen mothers in their respective markets and explained my research to them. We later met with the sub-queen mothers and women traders, during which I wore a T-shirt which had 'South Africa' inscribed on it.

Makola market was the first site I visited and met with the President of the Greater Accra Market Women Association. After our meeting she introduced me to the leader or head of

the women trader's church fellowship of the market. The leader of the fellowship notified me of the days of fellowship and promised to inform the women traders about the study during their fellowship which is held every Tuesday and Thursday mornings before commencement of trading activities. This day was a Wednesday so she asked me to make it to the fellowship the next day (Thursday).

I made it to the fellowship and got there after it had started and the leader had already communicated to the women traders the information about the research. I was very glad about this and I was introduced and gave further details of the research to the women. The fellowship is held while traders are still seated behind their goods. There was a microphone and the leaders of the fellowship gathered in the stall of the head and directed the fellowship through prayers, worship and praise songs. This lasted for only thirty minutes and women traders then concentrate on their trading activities. I had no prior knowledge of this fellowship in the market and it was an interesting moment for me.

Another interesting moment in the market was when I introduced myself and gave my name; many of the women traders preferred to call me "South Africa" because of the T-shirt I wore. Some of the women traders who did not see me as I was introduced welcomed me warmly into their stalls as I approached them to conduct interviews. This was very helpful, especially on the first day, as the women traders were able to easily identify me with the South African T-shirt I wore. I was not therefore considered a stranger barging into their stalls and interacting with them. Due to this initial identification, interviews conducted on subsequent days were successful.

My new identification cut across three markets –Agbogbloshie, Kaneshie and Madina – as I met with queen mothers who later introduced me to the sub-queen mothers. However, in these three markets, I was not introduced through a church fellowship but during the meeting with the queen mothers and leaders of the market. After the introduction a sub-queen mother introduced me to other traders and interviews began from there. I was able to identify women for interviews through the use of their mobile phones as I walked through the markets, or women traders I interviewed informed me of other traders who own mobile phones and who fell into the categories of the vegetable and textile trade.

During the interviews especially among wholesale vegetable women traders in Agbogbloshie market, women traders shared jokes with each other and told their friends that they are being interviewed and this would be aired on the television so they should be behind their television

set that night. Others also shouted to their colleague traders as interviews were being conducted and jokingly and said 'hey speak English with her' as they laughed and made fun. Others also shouted jokingly said 'hey she does not know how to use her internet, all she does is to make calls, she is not high-tech like you'. In cases where the traders opted to speak English in the other three markets (Makola, Kaneshie and Madina) other traders nearby applauded and shouted across saying 'blofo fo' (literally meaning 'English is crying' in Ga). I was surprised as the women traders who opted to speak English expressed themselves easily even though there were some grammatical errors.

Through this research I obtained knowledge of different brands and models of mobile phones as women traders showed me their mobile phones. Women traders who had no knowledge about their models and phone features often handed me their mobile phones and asked me to show them the brand name. I then scrolled through the menu options to inform them about some of their mobile features. However, most of them were interested in knowing whether their mobile phones have the internet feature. Women traders who had knowledge of their mobile phone features demonstrated how to make calls, saved their contact numbers and showed me how to load credits (airtime) on their mobile phones. These made the women proud as they demonstrated their literacy among their other trader colleagues.

I learnt of the Nokia code that is used to identify a Nokia model through this research process.[127] This knowledge got to me through a son of one of the women traders I met in as we waited at dawn for the arrival of wholesale women traders and suppliers in Agbogbloshie market.[128]

Through this study I had knowledge of how women traders particularly textile traders arrange their textiles for display in their stalls for sale. I gathered this knowledge because I arrived in the markets early and conducted interviews as they arrange and display their textiles for sale. With the observation undertaken, I also gained more insight into trading activities in Accra particularly in the activities of vegetable wholesale trade; as they return from their journeys and how they use their mobile phones to transact their business activities.

[127]This proves to be helpful throughout the field work because it enabled me to identify the models of all Nokia mobile phone brands I came across during my interviews.

[128]I took pictures of all the mobile phones owned by women traders interviewed, irrespective of the brand. I went to the mobile phone markets and shops (with the photographs) to find out about all the other brands and their models. I further used the internet to augment my findings from the mobile phone markets and shops as well as find out in detail the specifications of the mobile phones.

Some women traders were enthusiastic about the research and happily answered questions during the interviews. In some cases this was because they also had children in the universities who had undertaken research before, as these women understood some of the sticky situations of fieldwork. These women traders at the end of the interview sessions wished me success in my work and God's blessings as I return back to South Africa. Some even gave me their contacts numbers in order to continue interacting with them when I get back to Stellenbosch. Through this fieldwork I made a lot of friends in the markets, who requested that I visit them when I return to Ghana.

Even though I had such interesting moments during my fieldwork, I also experienced the other side of the coin. Riach (2009) argues that in research situations one is likely to experience sticky moments that could engender participant-focused reflexivity. I encountered some difficult moments of my own that I had to transcend.

First, some of the women traders assumed that I was a network provider employee and asked me why they had been cheated when they bought airtime. Others also narrated how mobile phone network providers charge costly tariffs for just a short call and cautioned me to send these grievances to management. This coincided with promotional packages and services (starter packs with airtime and mobile money transfer) that were being advertised. There were also workers (hired part-time workers, mainly students) in the market, hired by two of the mobile phone network providers. These grievances often came up when the interview sessions were almost over. I explained to these women traders that I was just a student gathering data for my thesis and they understood as I identified myself using my Stellenbosch University student ID.

I was also mistakenly thought to be a journalist by some of the women traders, especially in Kaneshie market, because of the recording of the interviews. Some women traders cautioned their fellow colleagues, who I had interviewed, to be alert, saying their views would be aired on television and radio. This was a bit of a tough situation for me but surprisingly these women who were cautioned responded to their trader colleagues and told them that they were not worried about this. This, they said, was because they had not said anything that would endanger their lives. They argued that they were rather going to be proud to be heard on radio and be viewed on Television.

On the question of compensation, some women traders demanded a mobile phone after the interviews, or at least some soft drink to quench their thirst after the long discussion. They

believed that I had been given some money as compensation for interviews and I was keeping it for myself. I navigated this difficult moment by showing my student ID and other traders informed them that I was only gathering data for my thesis. In fact one women trader insisted on me getting her a soft drink, claiming to be thirsty after the interview and I ended up providing her with one.

It was difficult to interview vegetable wholesale women traders, specifically in Agbogbloshie market when they had just returned from their journey with their goods and their focus was on selling their goods. Here I had to wait for some time before commencing my interview, but this gave me an opportunity to observe their trading activities.

I also visited all the mobile phone network providers' offices (their headquarters) with a request letter listing the type of information I would like to gather, such as the number of female and male subscribers in Ghana and Accra, the occupational status of mobile subscribers (to inform me of those in trade), their coverage areas in the country, the types of mobile phones used by subscribers and their mobile subscriber growth rate over the years etc. Although I had introductory letters written by the Graduate school of University of Stellenbosch, I was not given any report at the offices to enable me obtain the information I had requested. The directors or management of the companies suggested that I gather this information through their website. Some of the directors or managers of the mobile phone network providers gave me their business card and emails to contact them later if I was unable to find the information I needed. After visiting their websites, I could not obtain all the information I needed so tried to make calls and send emails to the directors. None of the emails or calls was ever answered, which made it a bit difficult to get the data I needed. However through a thorough search on the internet, I was able to navigate this situation and access at least some of the relevant data which I was able to use for my work.

Finally, although a visit to the National Communication Authority (NCA), the telecommunication regulator of the country, was planned, in order to understand the ICT sector of the country and assess reports on telecommunications growth, penetration rate, and the regional distribution of mobile phone subscribers, this did not materialize. The director who I had tried to meet later called me, and – after assessing the introductory letter that I had left – informed me that such data (and documents) are not made public to access. I explained to the director that I was only a student and that I would use the data only for my thesis. He asked me to come to the office again, so we could discuss how best to get the information I

needed. I went back to the office several times, but he was unavailable and I did not get access to any documents. I was able to navigate this situation to some extent, and accessing some of the data I needed on their website.

4.9 Data Analysis

Bryman and Burgess (1994:274) argue for the continuity of analysis throughout the tenure of a qualitative study, noting the research design, data collection and analysis are simultaneous and continuous processes. In conducting this study following Bryman and Burgess' suggestion I analysed my data throughout the phases of this study, although I paid much more attention to the data after fieldwork. I analysed data from the different sources – the semi-structured interviews, and the observations and reports – in an integrated manner to allow for triangulation. In engaging in my analysis throughout the phases of my study, I was able to revise some of my questions in terms of observations made in the field and to also search for data to understand questions that arose during my field work.

Bryman and Burgess (1994) argue that analysis of data is informed by the type of data one is dealing with and the aims of the study being conducted. In this study I generated qualitative data[129] on women traders' discourses and the role of mobile phones in their businesses and lives. Considering the data I have, I opted for thematic content analysis. This is because Anderson (2007) argues that thematic content analysis is the most foundational of qualitative analytic procedures and in some ways informs all qualitative methods. Boyatzis, (1998) also notes that thematic analysis as a method also enables a researcher to identify, analyse (themes) and report patterns within a qualitative data which minimally organises and describes such a data set in (rich) detail. I therefore employed thematic content analysis to uncover themes from the interview transcripts and to develop broader theoretical propositions for the study on the basis of the practical realities encountered by the research subjects.

Seidman (1998) argues that interviewers who transcribe their own recordings come to know their interviews better. I therefore started the analysis by translating and transcribing all my interviews into English with the assistance of a Ga and Twi translator/lecturer. I proceeded to generating codes from the texts (transcriptions). Smith (2008) explains that coding is the process of defining what the data are about and that codes emerge as you scrutinise your data and find meaning within them. Atlas-ti – a qualitative data-analysis software package –was

[129] This refers to my primary data.

employed to facilitate the processing and analysis of the interviews. Codes were therefore generated after all the translated interviews had been downloaded or transferred to the Atlas-ti software as primary documents.

The coding took the form of a three-stage process. First I read the transcriptions to familiarize myself with them. Secondly, I worked through the dataset in a more detailed manner to identify patterns that indicated instances of use and the effect of mobile phones on businesses. At the third stage preliminary codes were collated and sorted into meaningful units (that is categories/code families) depicting possible themes. I reviewed and refined these themes and then selected extracts from the texts associated with these themes. In engaging in this procedure some sub-themes were identified. These themes and subthemes largely represent opinions on the usage pattern and the perceived effect of mobile phones on the selected women traders businesses and their lives.

4.10 Research ethics and protection of research participants

This research is informed by the ethical guidelines contained in the International Sociological Association (ISA) code of ethics. I also followed Stellenbosch University's ethical clearance process. A research proposal was submitted for consideration by the Departmental Ethics Screening Committee (DESC) in the Department of Sociology and Social Anthropology. Following this the proposal was submitted to the Faculty's Research Ethics Committee (REC), where it was approved. As expected of research that involves people, informed consent was sought and the confidentiality of the responses was assured before the interviews commenced. I made known to my participants that information gathered would only be used for academic purposes, such as the writing of the thesis and journal articles.

4.11 Conclusion

In this chapter I explained how I have situated my study, constructed my field and selected my cases. I also revealed how I interacted with my research participants and entered their 'business and social world' in order to understand the use of mobile phones in their trading activities and social lives. I also discussed how I transformed data from the field into text and unearthed themes that enabled me to interpret the discourses of the women traders that I interviewed. Having articulated the manner in which I conducted my fieldwork and analysis, the following chapters will engage with the data and present my interpretations. The following chapter focuses on patterns of access, knowledge and use of mobile phones among women traders in the four markets selected.

CHAPTER FIVE

WOMEN MICRO-TRADERS IN ACCRA: KNOWLEDGE, DIGITAL LITERACY AND PATTERNS OF MOBILE PHONE USE

5.1 Introduction

The spread of mobile phones in Ghana has not excluded the actors of the informal trading economy: Ghanaian women in market trade have adopted mobile phones and are using them in their trading activities. The rationale that led these market women to integrate mobile phones into their activities and how they acquired technological knowledge to use their mobile phones, as well as the ways in which they use their mobile phones, is worth knowing in order to assess the effect of mobile phones on the performance of their businesses or economic activities and social lives of women traders in Accra.

This chapter presents findings from interviews conducted in the four markets[130] selected for the study. In this chapter the focus will be on the knowledge and the patterns of use of mobile phones among women traders in the selected markets in Accra. The chapter begins with data on the socio-demographic background of women traders interviewed. It examines the services available on the mobile handsets owned by the women, before exploring the motivation for mobile phone acquisition and concluding with a discussion of mobile phone usage patterns among the women traders.

5.2 Socio-demographic background of women traders

The socio-demographic status of the participants in a study is important in understanding their behavioural patterns and it also enables the researcher to make inferences in analysing and interpreting study findings. For this reason it is necessary to understand the age, ethnicity and educational backgrounds of women traders in the selected markets in Accra and how these affect their patterns of mobile phone usage.

5.2.1 Age distribution of women traders

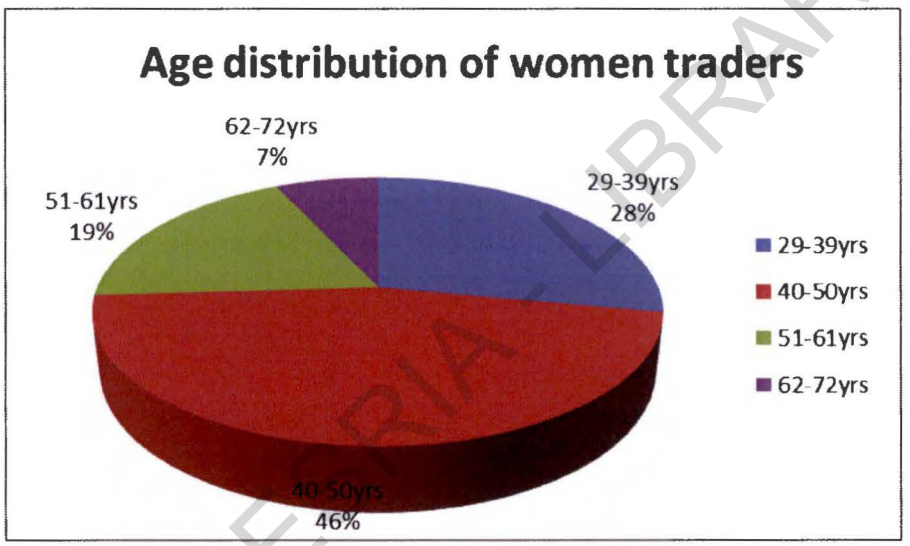
Participants were asked to provide the year in which they were born, however some of the participants felt a bit uncomfortable to disclose this information and others were not willing to answer the question. The reason appeared to be the location of the interviews; these were

[130] Makola, Agbogbloshie, Kaneshie and Madina markets.

conducted in the open market where there were a lot of people around such as colleague traders and customers that might have made interviewees uncomfortable to disclose their ages. I therefore made it optional for participants to decide whether to respond to the question on their ages.

Just a little under half of the participants[131] did not wish to disclose the year in which they were born. For the forty- three participants that gave their ages, these are the distributions[132].

Figure 5.1 The age distribution of women traders



As shown in figure (5.1) above more than half of the women traders who disclosed their ages were between forty and fifty years of age. The age distribution suggests that both the old and young participants in the market owned mobile phones.

[131] 29 out of 72 interviews conducted (forty percent).
[132] Age distribution started from 29 years because that was the age from which participants interviewed ranges from.

5.2.2 Ethnic background of women traders

The findings of the study show that among women traders interviewed, Akans (Twi) predominate (42% of participants) followed by Gas (36%), then Ewes (27%) and lastly Dagare/Dagbani (4%). This reflects the cosmopolitan nature of Accra and also shows the main local languages spoken in Accra markets. The findings also suggest that the indigenes of Accra, the Ga people who use to predominate in market trade in the twentieth century (Robertson, 1983/1984, Pellow, 2008) have been joined by other ethnic groups as the city of Accra expands. Today other ethnic groups from other regions of Ghana are engaged in trade in Accra markets. The findings might also explain why Akan (Twi) is gradually becoming a lingua franca in Accra as argued by Dakubu (2009).

5.2.3 Educational background of participants

The new digital age that is associated with the emergence of new information and communication technologies (ICTs) is noted to be knowledge intensive and require some form of digital literacy for one to enjoy all the benefits associated with it. As mentioned earlier one of the reasons accounting for the rapid adoption of mobile phones in developing countries is that little or no special training is needed to operate them (Comer & Wikle 2008; Hinson 2011; James, 2011). Nonetheless with the development of mobile phones over the years, mobile phone functions have gone beyond voice communication, and new forms of digital literacy[133] are essential to effectively use mobile phones to their full services available and to attain greater satisfaction from these additional functions and services. While making and receiving of calls is not that complicated and does not require high literacy skills to use a mobile phone, other mobile service platforms – for example texting – require some literacy skills. Formal education to some extent therefore becomes necessary to attain digital literacy and to use recent (new)[134] mobile phones to their full capability and enjoy all the benefits. In this context the educational background of women traders in the four markets selected in Accra was probed to get more insight of their literacy levels. The table below shows the results obtained.

[133] That is technical literacy, information literacy and basic language literacy (as explained in detail in chapter three).
[134] Smartphones.

Table 5.1: Educational background of participants

Educational Attainment	Frequency	Percentage
Never been to school	4	5.6
Primary school drop outs	9	12.6
Primary/JHS[135]	12	16.6
Middle School[136]	30	41.7
Secondary[137] / SHS[138]	8	11.1
Commercial/vocational	7	9.7
Tertiary[139]	2	2.7
Total	**72**	**100**

Source: Field work 2013

As reflected in Dunne and King's (2003) study the majority of Ghanaian market traders have basic education as their highest educational level and the 2010 Population and Housing Census[140] in Ghana notes that women with basic education constitute the largest category of women who attended school in the past. This therefore explains the education inequality among men and women in Ghana and this could be one of the reasons that led most women to be involved in self- employment activities such as market trade. This study finding as indicated in Table 5.1 shows that most (42 out of 72 participants) of the women traders interviewed have basic education[141]. Only a little under one third of the women traders interviewed have secondary or higher educational attainment and about one sixth of them do not have any formal education (never attended school or dropped out). However with a little under one third of the women traders with secondary school or higher education, this suggests that Ghana's informal trade economy is not only made up of people with low educational attainment. In other words low educational attainment is not the only reason that contributes to the entry of women into market trade as mentioned early on, as study findings show that women with secondary or higher education are found in informal trade.

[135] Junior High School.
[136] Middle School for those attended school in the past, it was replaced with Junior High School (JHS).
[137] Ordinary and Advanced level ('O' & 'A' level): The type of secondary school in the past.
[138] Senior High School (SHS) came to replace the type of secondary school in the past.
[139] Here this refers to Polytechnic education.
[140] 2010 Population and Housing Census: Ghana Statistical Service (2012).
[141] Primary, Middle School and JHS are considered basic education in Ghana.

5.3 Inequality in technical access and rationale for mobile phone acquisition

5.3.1 Mobile phone functions and services

Of interest to this study is the difference in use and effect of mobile phone on the performance of women trading activities. The usage patterns associated with mobile phone functions and services depend on the brand and model of a mobile handset. Also appreciating the benefits of mobile phone owned depend on at least having knowledge of the mobile phone brand/model owned. For this reason I explored whether women interviewed have any idea about their mobile phone brands and models. I noticed during the interview that none of the women interviewed had any idea about their mobile phone models[142]. These women appear to have no knowledge about second or third generation mobile phones. Upon further probing the women appear to know that a mobile phone is the latest model when it has services like the internet which enables one to enjoy applications such as Facebooking but could not identify whether their mobile phones supported a 2G or 3G mobile services. This suggests that these women will not be able to enjoy and fully explore the mobile services available on their mobile phones owned as they have no idea about generation mobile services their mobile phones support.

However more than three quarters of the women interviewed knew the names of their mobile phone brands. Women traders who had no knowledge of their mobile phone brands ended up being happy that through the interview they got to know their mobile phone brands. This is because the women traders who were not able to identify the name of their mobile phone brands willingly handed over their mobile phones to me and I identified the brand name and informed the owner which brand it is. Most of these women who were unable to identify their mobile phone brands were much older[143] and had no basic education. Most of these women were primary school drop outs, explaining the role of some formal education in one being literate. This suggests that younger women traders identify more with mobile brands names as they have had some form of formal education.

In Accra there are a variety of mobile handset brands and models that one can purchase. A study by Dziwornu's (2013) found out that mobile phone users in Accra have a preference for Nokia and Samsung. Nokia's popularity would seem to reflect its market position in Africa: its global market share is in Africa and other emerging economies (cnbc.com, 2013). In light

[142] The mobile phone models owned among study participants would be discussed later in the chapter (see section 5.3.2).
[143] At least fifty one years.

of my interaction and interviews with these women, I realised that a large number of handset brands were used by women traders interviewed. Nevertheless Nokia and Samsung appear to be the most common used by the women traders. The least common mobile handsets were those produced by Sony Ericsson and Blackberry. The table below shows the different mobile handsets owned by the women traders interviewed.

Table 5. 2 Mobile handset brands among women traders interviewed

Mobile handset brand	Frequency
Nokia	26
Samsung	24
Techno	10
Others (Itel, xtel, G5, Gtide, Sydney)	8
Network providers branded (Vodafone, Expresso & Airtel)	5
Lg/Rlg	5
Sony Ericsson	2
Blackberry	2

Source: Field work 2013[144]

From the table (5.2) above Nokia and Samsung appears to be owned among the majority of women interviewed. The majority of women[145] reported that their preference for Nokia and Samsung is due to their lasting longer. However, I find it quite interesting that many of the women interviewed do not own Rlg mobile phones that were manufactured or assembled by the new mobile phone manufacturer in Africa which has a branch in Ghana. This could be that Rlg mobile phones are new in the Ghanaian market and not well known. Nokia and Samsung mobile handsets that are mainly imported into the country rather appear to be the predominant mobile handsets among participants. This could suggest that Nokia and Samsung have become well known or marketed reflecting it wide market share in Africa.

[144] The total number of mobile handsets is eighty-two because there were ten participants who had more than one mobile handset.

[145] These are the women traders who purchased their mobile phones by themselves (that is 27), and my interaction with 20 out of these 27 women revealed this assertion.

The owning of more than one mobile handsets was not common among women traders interviewed as the study findings show that only a small proportion of them (10 out of 72) have more than one mobile handset. The women traders in the selected markets in Accra pointed out what accounted for them having more than one mobile handset: they typically received an additional mobile handset as a gift from family or friends (in some cases boyfriends) after they had purchased one themselves.

5.3.2 Mobile phones and intergenerational differences

The examination of phones models used by the traders interviewed[146] shows that there exist differences in technical access (technical inequality) to mobile phones among the women traders. It was noted during the interviews that second generation (2G)[147], second and half generation (2.5G) and third generation (3G) mobile phones are accessible to the women traders. However it was realised that 2G mobile phones predominate[148] and less than one third of the interviewed traders had third generation (3G) mobile phones[149]. It was noted that those with 3G mobile phones were predominantly textile traders having secondary education or higher and are not more than forty years old. This suggests that smart mobile phones tend to be owned by younger women traders with higher literacy levels. It would also seem that the younger generation (in this situation women traders) tend to prefer the latest mobile phone models as having such models shows they are abreast with recent mobile developments. The finding may suggest that women with secondary school or higher education prefer to be involved in non- perishable trade (textile) rather than in perishable trade (vegetables).

5.3.3 Mode of Mobile Phone Acquisition

The choice of having a particular mobile phone brand and model was not a decision made by most of the participants. From my discussions with these participants it would seem that mobile phones were mainly received as gifts from family members.[150] Mobile phones as argued contribute to the maintenance of relationships and the strengthening of social networks (Goodman, 2005; Brinkman et al; 2009). They have become a necessity in

[146] Photographs were taken of all handsets owned by the women traders. Samples of these mobile handsets are attached to the Appendix 3.
[147] Examples of the mobile phone models used by women traders interviewed can be found in Appendix 3.
[148] Fifty of the mobile handsets support 2G mobile service (samples of these 2G mobile phones are attached, see Appendix 3).
[149] Fifteen of the mobile handset support 3G mobile services (samples of these mobile phones are attached, see Appendix 3).
[150] 45 out of 72 participants received their mobile phones as gifts.

everyday activities and a means for people to stay connected with family and loved ones, particularly in African countries such as Ghana where fixed landlines are scarce and often unreliable. This might explain why mobile phones were purchased by family members for the majority of women traders interviewed.

About a little over one third (27 out of 72) of the participants traders bought their mobile phones themselves and the choice to buy a particular model and brand was not based on the mobile services associated with the model - the choice was essentially based on how attractive the mobile handset was and on how expensive it was. In the opinion of most participants who bought their mobile phones themselves[151], mobile phones that cost hundred Ghana cedis (GHC 100) and more were costly and therefore they claimed to trust such mobile handsets to last longer. These were often the latest models. This point was reiterated by numerous women traders (24 out of 27 traders) who purchased their mobile phones themselves. A tomato trader in Kaneshie market reinforces this position and states that:

> You know we market women we like to buy the expensive and latest mobile phone even though we do not have adequate knowledge [adequate digital literacy] about how to use it. When I even went to buy this one I said I wanted the one that is very expensive and the latest model, so when I was told this one is 100 Ghana cedis that is expensive. I am also told it the latest model then I bought it. We are not really concerned about the know-how to use all the features and applications on our mobile phones, so far as we can call it is fine. But there are some of the market women who know how to use most of all their mobile phone features and applications very well but majority of us do not. We prefer to buy the attractive and the expensive mobile handsets because they last longer (interview # 12).

This suggests that most participants are not concerned about how much knowledge they have about the services of their mobile phones. They acquired mobile phones (and have preference for the latest models) because they realised the necessity to become part of the mobile phone era and be identified as part of mobile phone users in Accra reflecting that mobile phones though have become prevalent are still status symbols.

[151] 27 out of 72 participants bought their mobile phones themselves.

5.3.4 Role of mobile phone network providers

Mobile phone network providers have a role in influencing the use of mobile phones as their services and packages offered as well as their charges (with reference to cost of calls per minute and airtime/credit vouchers) among other factors are considered by users before purchase. The MTN mobile phone network appears to be well known and widely used in Accra and Ghana as a whole. It is the leading network service provider and has had the greatest market share since it started operations in the country. This could be the result of it being the first mobile phone network to start promotional packages (such as reduction in starter packs and free night calls). It was also the first to sell its airtime in lower denominations, leading many Ghanaians to subscribe to its network. In this study, the MTN mobile phone network was the predominant network used by the women traders. This was followed by Tigo, and mobile network service used least by the women traders was Expresso.

In the world of unreliable mobile network services, with expensive charges and the risk of losing information, my probing further and asking about mobile network used, it became apparent that women traders have adopted coping mechanisms to remain in touch and available to their trading partners and family. In this context, some (24 out of 72 traders interviewed) of the participants use more than one single network.

Just under half of participants[152] who had access to more than one mobile phone network cited poor network services as the major reason accounting for the use of more than one network service.

> Because sometimes some of the networks can get congested and busy or fail you, since you always want to get in touch because of business, you need more than one network so you can easily transact business when a particular network fails or gets congested. It is therefore important to use more than one network so that you can easily transact business when the need be for you not lose out or find yourself missing some information or wanting (interview # 5).

Having mobile phones that can take more than one SIM card, expensive call charges to other mobile networks, taking advantage of reduced cost for calling the same network and exploiting the networks by purchasing a SIM card from any new network providers that join

[152] That is 10 out of 24 participants.

the existing operators were other reasons accounting for using more than one network among some of the women traders (8 out of 24 traders owning more than a single network). A textile trader in Makola narrated:

> I am using all the five networks in Ghana, I use Tigo, Mtn, Vodafone, Glo and eem, is it up to five and ok, this is Mtn and Airtel, this is Tigo and Vodafone and this is Glo, so if you are using Glo, I will put (store) your number on Glo, if you are using Tigo, I put your number on the Tigo SIM, so that the network when I call it does not consume much because is less expensive to call the same network (interview # 24)[153].

A woman trader (leader) of the Kaneshie market (association) put it this way:

> You know we keep on exploiting, every time new network providers keep on coming and they tell us it is the best so we also try to see and by doing this I realise I have four lines (interview# 35).

My further probing during the interview revealed that the use of more than one network among the women traders was also influenced by the tendency of some customers not to answer a call from a trader they owed money to. Women traders therefore resort to using multiple SIM cards as a means of tracking customers and collecting of their debts. This trend was noted by most[154] of the retail textile women traders interviewed who were using more than one network:

> I am a business woman so I need to have more than one network, this is because when the customers get to know your number and you call them, they sometimes refuse to pick because they have not yet paid their debts as promised, so if you realise this, one day you will use the other network to call that customer. You only have to give the customers one of your contact numbers, so when you use any of the other number the customer will pick without knowing you are the one. This is the reason why I have three numbers (interview # 4).

The subscription to multiple networks for the aforementioned reasons noted in this study might contribute to the difficulty in getting an accurate penetration rate of mobile phone subscribers in the country, Ghana.

[153] This woman trader has three mobile handsets with two being a double SIM mobile phone.
[154] That is four out of the five retail textile women traders who access more than a single network.

5.3.5 Motives for mobile phone acquisition: business information and social networks

The smooth and successful trade transaction is unarguably based on access to information. Information asymmetries and the access to business information are some of the key challenges associated with the transportation and distribution of goods in Accra markets. This can be set against the background of poor road networks, traffic congestion, unreliable middle men and the dispersion of trading partners in market trade in Ghana. The majority of the women traders interviewed (43 out of 72) referred to market or business information challenges as a motivating factor in the acquisition of mobile phones. This rationale for mobile phone acquisition was particularly evident among wholesale vegetable traders (20 out of 25 vegetable wholesalers).

Apart from enhancing access to business information, women traders interviewed acquired mobile phones to stay in touch with their family and loved ones.[155] However during the interviews and interactions with the women in all the markets selected, I noted that mobile phones were acquired for social purposes in particular among retailers. A number of retail women traders echoed this position[156]. A retail textile trader in Kaneshie market thus narrated:

> My husband travelled abroad and I need to get in touch with him, as a result I bought a mobile phone so we can stay connected (interview # 61).

A vegetable retail trader in Agbogbloshie market put it this way:

> It is very helpful, for instance my daughter is in boarding school in Cape Coast [school outside Accra] and I have not seen her for a week now since she left, but this morning I called to find out how she is fairing. Through that I got to know she is doing well, if she was not well, she would inform me and then I will know what to do. If I was not having a mobile phone and she was not having one either, then I have to wait for one month to visit her, I have to take transport all the way there, you know they are to be visited once a month. So I think having a mobile phone is helpful (interview # 30).

[155] This reason was echoed by 29 out of 72 study participants.
[156] That is 22 out of 36 retailers interviewed.

From the interviews, accessing business information was the predominant reason accounting for mobile phone acquisition among wholesale traders, whereas among retailers the main reason was to stay connected to family and loved ones; for social purposes.

5.4 Patterns of mobile phone use among women traders

The rationale for acquiring mobile phones varies from user to user as pointed out by DiMaggio & Hargittai (2001) which shows that mobile phones are multi-purpose technologies. Geser (2004) also argues that the reasons for acquiring a mobile phone begin with a narrow conception but uses considerably enlarge over time. The initial motivation or intended rationale for having a mobile phone, and what it is actually used for – which might not have been intended among participants – therefore need to be distinguished. To ascertain this, I also asked the market women interviewed about their usage pattern of mobile phones.

From the discussions, it would seem that participants use their mobile phones for two main purposes: first for their trading (economic) activities and second for personal or social activities which Australian Mobile Telecommunication Association under the Australian Research Council (AMTA/ARC) as mentioned early on refer to as social connectivity (Wajcman et al; 2007). The basic function of mobile phones, calling, is the predominant way in which traders interviewed use their mobile phone for both their trading and social activities. The findings of the study show that these traders have three key strategic groups in their network of mobile phone use. These are suppliers, customers and families.

5.4.1 Business calls: women traders' economic pattern of mobile phone use

In the coordination of their market trading activities, women traders use their mobile phones for four related purposes with regard to suppliers and retailers or customers. These purposes are: accessing price information (checking, comparing and prices changes); making orders; checking on availability of goods with suppliers and traders; and reminding customers of their debts.

The participants' narratives echoes that calls are usually made to suppliers to check on the prices of goods, make orders and receive information on availability of goods, as well as to check when suppliers will be arriving from farmlands with goods for the market. This point is reiterated by all the wholesale vegetable traders and vegetable queen mothers in all the

markets also reinforced this position. A cucumber wholesale trader in Agbogbloshie market states:

> ... The mobile phone we own, we usually use it for business. We use it to call our suppliers to make order for our goods and I call them to know when they will arrive here with the goods. Nowadays the goods have become very expensive and very scarce and the prices keep fluctuating. We formerly buy a sack of cucumber for 70 Ghana but now it cost 120 or 100 Ghana cedis. So it has become a problem for us, we make calls to find out if some of the goods are available and their prices (Interview # 10).

Another wholesale tomatoes women trader narrated:

> I use my mobile phone for my business. I use it to find out the prices of tomatoes in Burkina Faso. When I get to Burkina Faso too I call to find out how things are going on in the market and the prices that things (goods) are being sold here in Accra. As for the mobile phone we use it for everything as well as our businesses (interview # 8).

The narratives of the wholesale traders also show that suppliers or farmers are also called by wholesale vegetable traders and particularly queen mothers, who are unable to make it to the farmlands to pick up their goods - to inform them about their orders and the amount of money they have paid through drivers and sometimes through the bank for their orders to be delivered to them. Wholesale women traders in all the selected markets in Accra also receive calls from their suppliers to be informed about how much they sometimes need to pay when goods are sent through a driver:

> The mobile phone has been very useful, I sometimes call other suppliers when I have no goods and make an order by telling them of the quantity of goods I need, and then they send them to me through a driver. The supplier or farmer will also call to give you the details of the driver and where to go for the goods, maybe through the VIP transport[157] yard and I go for them. I am able to call the driver to know if he has arrived with goods or not (interview # 31).

[157] One of the popular bus transport systems used in the country to travel from one region to the other.

During the interviews I noted that other traders – predominantly retail traders – use their mobile phones to compare the prices of commodities by calling their fellow traders. A vegetables trader said:

> At times I call a friend (colleague trader) at Agbogbloshie market and the Makola market to check on the prices of the tomatoes, sometimes the prices are not equal, it may be higher in one market than the other. It enables me to bargain from the one I am buying from, you understand what I mean (interview #37).

Customers or retailers are called by wholesale women traders to inform them about price changes, find out when they will be available to pick up orders they have made, or to inform them about an order they have made which is ready to be picked up. Numerous vegetable retailers[158] opined that they do receive calls from their wholesalers about price changes and orders ready to be picked up. A vegetable wholesale trader said:

> Before travelling to the bush (farmlands), we are told the tomatoes cost maybe 100 CFA, but when we get there, the price might have gone up maybe to 140, so we call our customers (retailers) to ask them if we should buy it or not by informing them of the new development in price. Then if they agree we buy it, otherwise when we get to Accra, selling it sometimes become very difficult due to the new price. If the situation becomes difficult we will sometimes have to call our customers (retailers) from their homes to come and buy. But that is not a good experience so we usually let our customers (retailers) know before we buy from the farmlands (interview# 7).

My interaction and interviews among wholesalers also revealed that wholesale traders in the markets use their mobile phones to contact customers (retailers) regarding the arrival of new products, especially perishable goods (vegetables)[159]. For business calls, my interactions and interviews with traders revealed that other customers are contacted to check on the status of debts. A textile trader narrated:

> … I have their contact numbers and so I can call you later to bring the money, sometimes if they keep long in coming to pay their money, I call to remind to them and because they are God fearing, apologise and then come and pay their debt (interview # 33)

[158] 33 out of 36 retailers interviewed.

[159] Apart from their narratives I witnessed this physically during my observations among the wholesalers or suppliers arrival in the markets. Upon their arrival they made calls informing customers of their arrival with new goods.

With regard to calling their customers about the availability of goods, it was noted that what transpires among wholesale traders is quite different from retail traders. Retail traders, particularly of non-perishable goods (textiles), do not often call their customers to inform them about available goods, but it is rather their customers who tend to call to find out whether they are available in the market and or to make orders when necessary. Calls are therefore received from customers mainly to make orders, schedule times to pick up an order or to check on the availability of a trader in the market.

From my interaction with the women, I realised that among wholesale textile traders, some textile designs become scarce. They therefore make calls to their retailers to enquire whether they have these designs. Retail traders confirmed this assertion and narrated that they sometimes received calls from their suppliers (wholesalers) to enquire from them if they have a particular textile design that is in short supply.

> They do, if they also want a particular design which they are short of, they call to find out if I have any and then come for it (interview# 22).

The study finding also revealed that traders often call each other to enquire about goods (designs) that are in short supply. This was common among wholesale textile women traders. Textile retailers also called fellow traders to enquire about scarce designs, often while customers wait to purchase these designs.

It was also noted that customers apart from being contacted for business purposes, are also contacted for social purposes. Traders interviewed call their customers sometimes to find out about their well-being, especially when they have not been to the market for a while. Through these calls (or greetings) to check on the well-being of customers, relationships are reinforced with customers which in turn strengthens their relationships (friendships) leading to more trading transactions and better market information. These types of calls are often made by textile women traders. A Makola market retail textile trader states:

> ...So if I have not seen someone who has been buying from me for quite a long time, I also call the person to say: it is a long time I am seeing you, how are you? How is business [work] there and then the person tells me say oh its nice [fine] and I will come to the market this day or on that day. Then I welcome the person when she comes (interview # 24).

The queen mother of textile traders in Kaneshie market reiterated this point made by numerous textile traders[160] when she stated:

> We are able to call our customers and ask how they are faring when we do not see them for a long time, sometimes they may be ill and through the call we are able to know that...(interview # 33).

The interviews show that in using their mobile phones, women traders engage in frequent interaction and thereby become closely knitted together with their suppliers and customers to undertake their business activities. Mobile phones therefore become an umbilical cord (Palen et al., 2000) that connects traders and their trading partners, in order to coordinate activities for a successful trading transaction. The presence of mobile phones therefore allows women traders in the selected market to access business or market information.

5.4.2 Social calls: social connectivity patterns of mobile phone use

Apart from women traders using their mobile phones for their business calls, the predominant initial reason for acquisition, they also use their mobile phones for social connectivity. This enables them to stay connected to their family, friends and loved ones. For social connectivity purposes women traders call their husbands, children, other relations and friends to find out about their well-being.

In light of the narratives among the women, I realised that mobile phones provide good sense of security among traders as they are able to call while having difficulty on the roads during their travels. In cases of emergencies, such as the breakdown of a transport vehicle that might lead to a delay in returning home, women traders - and particularly wholesale vegetable traders – frequently call their families to inform them of the reason for the delay. The vegetable queen mothers in all of the markets selected for the study acknowledged the making of calls to families when women traders are unable to return home as scheduled due to such emergencies. A vegetable queen mother narrated thus:

> I am a business woman who moves from place to place so I need a mobile phone to get in touch wherever I am. In cases when I go to buy my goods from the farmlands and there is a delay because the truck [big lorries] breaks down, I call my family to inform them that I am fine or in case of any emergency on the way I can make a call.

[160] That is 20 out of 29 textile traders in all the markets selected.

This is what most of us do when we face such breakdown on the way, we call home (interview # 51).

The study finding also noted that mobile phones facilitate social connectivity among women traders as they are able to stay connected with their families and receive calls or are given information whenever necessary:

> ... I am able to know when my mother will go for her next check- up, if not I will have to travel all the way there to find out all these. My mother lives with my sister at Kasoa[161]. If not the mobile phone I will have to go to my sister's place and find out from her when my mother will go for her next check but with the mobile phone, my sister easily calls to inform me that we need to meet since it is time for our mother's check- up. The mobile phone has really helped in so many ways; we can easily make and receive calls from our family (interview # 1).

These study findings of social connectivity patterns with respect to the use of mobile phones among traders interviewed show the instrumental functions of mobile phones. With the presence of mobile phones, women traders in the selected markets in Accra are able to constantly get in touch with their children, husbands, and friends, which reassures them that they are well. These findings also reflect the 'connected presence' role of mobile phones among traders interviewed as they are able to stay connected with family and friends though not physically present.

5.4.3 Short Messaging Service (SMS) or Text Messaging as a pattern of use

Apart from calling, Short Message Service (SMS) or texting is one of the basic functions of mobile phones. I therefore found it necessary to explore whether the women traders in the selected markets used the texting function of mobile phones, and to consider this along with their educational and literacy levels. As mentioned earlier texting requires technical literacy as one needs to have the mastery of the techniques of text entry. To understand a text one must also be familiar with a written language, i.e. basic language literacy.

The study findings show that traders interviewed prefer making calls to sending text messages. More than half of these traders do not send texts. They argue that texting is a bit

[161] Is a town in one of the regions outside Accra.

difficult for them to engage in because it involves writing and is time consuming[162]. The majority of the traders explained that they are not literate, either in the official language of the country, English, or in one of the local languages. To them, texting involves some level of basic language literacy: knowledge associated with formal educational attainment as well as time, which they believe they do not possess.

Though a text can be send in any language, the issue of whether the receiver of that text can read that language is considered. In Ghana and Accra many people are not literate in their local languages[163] (Ghana Statistical Service, 2012). With English being the official language in Ghana and the medium of instruction in schools, writing is associated mainly with English in Ghana and this has been extended to texting. Texting in Ghana is predominantly done in English and therefore takes place between mobile contacts that are literate in this language.

Even though English is the official language and medium of instruction in Ghanaian schools, only twenty per cent[164] of Ghanaians are literate in English (Ghana Statistical Service, 2012), with a slightly higher figure of thirty-five per cent in Accra. Generally literacy and educational levels of women in Ghana are low. By virtue of English being the predominant mode of texting in Ghana, women traders interviewed prefer using their mobile phone for voice calls rather than texting, because to them their formal educational levels are not adequate enough to enable them to send or communicate using text messages. The traders explain that communicating via voice calls is preferable because they can speak in their local language without any difficulty.

The traders also point out that even though they have been taught by their children how to enter text, they have not been able to master the techniques, i.e. the technical literacy, because they also lack basic language literacy as they are not able to write in English. They associated texting with teenagers (because of their children)[165] and argued that their children are the ones who have the ability to understand the technical literacy mechanisms involved in sending texts. In Ghana, teenagers who have mobile phones are able to engage in texting and

[162] It is time consuming considering their literacy levels and the hectic nature of their work as they have to be on the move in the early hours in the morning and when in the market attend to customers. Also information needed to enable them to make a decision immediately therefore calling seems to be the best option for them as they found texting to be a bit complicated by navigating through the keypads to choose letters and construct a text.

[163] According to 2010 Population and Housing Census only 7% of Ghanaians are literate in a Ghanaian language and in Accra the figure is 4%.

[164] That is 11 years and older, according to the 2010 Population and Housing Census.

[165] These children are in school and most of them are 11 years and older.

similar applications such as using Facebook (mainly in English) without much difficulty (Adika, 2012). This clearly suggests that children of today have literacies in terms of technical and basic language literacies. This is because they were born during the digital age or the era of computers and associated new information and communication technologies, thus grew up with them. They could be referred to as 'digital natives'. This reflects a digital inequality with respect to age differences between traders interviewed and their children. Women traders interviewed are trying to become part of the digital age as they were born before the era of computers and these new associated information and communication technologies (i.e. 'digital migrants'- Zubieta (2010) or 'digital immigrants'- Prensky, 2001).

However it was evident that texting is not entirely out the domain of some of the women traders interviewed. Just less than one third of women traders[166] have some knowledge of text messaging and are able to send texts to family and loved ones. They point out that they are primarily involved in texting during festive seasons, such as Christmas, or when they do not have enough airtime for talking:

> ....I usually send message during Christmas seasons. I just write one Christmas message and forward it to all my friends. That is the time I usually send text otherwise I do not do so (interview # 14).

Women interviewed who are able to text clearly point out that they only send texts to their customers who are able to read, informing them about their orders that are ready to be picked up. The sending of texts or messaging is only evident among retail textile traders who are not more than thirty-nine years old and have secondary school education or higher. Therefore educational inequality to some extent has led to differences in the use of mobile phones among the women traders interviewed. This reflects a form of digital inequality associated with technical literacy and basic language literacy, as dimensions of digital literacy.

Digital inequalities were also noted among traders interviewed as study findings show that about one tenth of the women traders who own smart mobile phones (2.5G and 3G) use the Internet on their mobile phones (notably on Facebook and WhatsApp) but not for any economic activities. This category consists of women traders who are younger (less than thirty-five years old) and who have secondary school education or higher.

[166] 19 out of 72 women traders interviewed involve in texting. These women demonstrated their texting ability to me during the interviews.

The preceding discussion shows that a disparity exists among traders interviewed as the younger traders are able to navigate the keypads of their mobile phones or mobile interfaces and use text messaging, Facebooking and web browsing. This is because they have literacies in the form of technical literacy and basic language literacy as well as information literacy owing to them having higher formal education. Having information and instrumental skills suggests that some form of formal education is important for acquiring digital literacy and using one's mobile phone beyond the voice function. This suggests that being born in the era of computers does not necessarily guarantee that one will be able to use all the functions and services of a mobile phone owned, formal education associated with literacy level and having the various forms of digital literacy play a significant role.

5.4.4 Other features of the mobile phone used among women traders in Accra

Mobile phones, initially designed as voice communication technologies have developed over the years and now support a wide range of services such as camera, calculator, clocks, games etc; which provide users a wide range of forms of use. It therefore became necessary to also find out from traders interviewed, beyond voice calls and in some cases texting, the other features of their mobile phones that they use.

Participants acknowledged that beyond their call logs or phonebooks, they use the calculators, alarms and clocks for their trading activities: Calculators are used among wholesale traders to sum up purchases made on farmlands and daily sales of goods. A significant number (25 out of 36) of women interviewed reinforce this position and a textile trader in Makola states that:

> I use it to calculate things when my customers come to buy things from me, you know when we buy the calculator, it does not last so I usually use the one on my mobile phone to calculate (interview # 4).

Mobile phones serve as alarms, particularly for wholesale vegetable traders to set off to the farmlands to purchase their goods. Perishable goods (vegetables) are usually bought outside of Accra, either from the Eastern, Northern, Ashanti or Central regions of Ghana or from outside Ghana (notably Burkina Faso, Niger and Togo). These traders who go to buy these goods from the farmlands tend to leave at dawn or very early in the morning. They go in groups and schedule a time for their departure. In order not to be left behind, they set the alarms on their mobile phones which enable them to wake up on time. They usually return to

Accra at dawn or early in the morning and their customers (wholesale traders who do not go to farmlands) who purchase their goods upon the arrival also use the alarms on their mobile phone to enable them wake up on time to meet their suppliers before the goods are sold out.

The availability of mobile phones has led mobile phone (clocks) to become a substitute for wrist watches among women traders interviewed. The mobile phone serves as the main means of checking times for economic and social activities. Some of the women traders interviewed argue that, while they still put on wrist watches, they tend to forget about them because they have become used to their mobile phone clocks. Both wholesale and retail traders interviewed as well as the queen mothers in all the selected markets for the study reiterated this position. The Agbogbloshie market tomatoes queen mother narrated:

> This is my wrist watch (*she points to her mobile phone laughing*), my mobile phone is my watch, I sometimes put one on but more often than not I use my mobile phone to check the time. I even forget I have a wrist watch on (interview # 8).

5.4.5 The domain/knowledge of mobile money and mobile banking

With the rapid development of information technology, mobile phones have gone beyond the basic communication function; they therefore provide access to a range of services, such as mobile banking, mobile money transfer and mobile insurance. Noting that mobile phones are playing significant role in trading activities in Accra, predominantly via calling, I found it necessary to explore whether beyond this basic communication function of mobile phones, other mobile services such as mobile money and mobile banking are used among women traders.

Mobile money and mobile banking services have been introduced by the mobile network providers in Ghana and operated in most of the banks, but these appear to be in a formative stage. The 2012 Research ICTs Africa (RIA) Ghana Household and Individual ICT Access and Use Survey shows that only one per cent of Ghanaians have ever used mobile money services (Frempong, 2012). In Accra many sole proprietor businesses have emerged to render these mobile services, yet the women traders in this study appear not to have taken advantage of these services in their trading transactions. Most of the women traders interviewed stated that they have heard of mobile money transfer but have never utilised the service. While one tenth of the traders had used mobile money services in the form of money received from their

children abroad, they themselves had not used the service before. With regard to mobile banking, the women traders appear not to be aware of the existence of such mobile services. This similar finding is noted by Frempong (2009) as he found that among micro and small scale enterprises, financial services based on mobile phone platforms are underdeveloped in Ghana, even though a number of institutions such as banks have introduced the service.

This finding suggests that notwithstanding the numerous advertisements and awareness campaigns[167] made by the mobile network service providers and banks (and micro- financial institutions) about these services, the traders interviewed seem not to be informed or aware of these mobile services. This might be because they do not understanding the mechanisms and the role that these services can play in their trading activities. I believe the integration of these mobile services into micro-trading activities could minimise risks, such as thefts and attacks, since women traders often carry large sums of money on their journeys to purchase goods in the farmlands. Large sums of money are also carried on long journeys by drivers who make payments to suppliers or farmers on behalf of women traders who are unable to make it to the farmlands. However, to understand these services and benefit from them, one needs to be aware and educated about them. To me language appears to play a role in the dissemination of such information as the majority of these advertisements and awareness campaigns use English[168]. The low educational achievements and low literacy levels of traders (particularly in English) of the study may explain this lack of awareness. In this context mobile network providers should consider ways in which they disseminate information on these mobile services with regard to language used.

5.5 The question of knowledge, digital illiteracy and challenges in the use of mobile phones

5.5.1 Acquiring technological know-how to use their mobile phones

In acquiring technological know-how, only about one third of women traders (27 out of 72) learnt how to use their mobile phones all by themselves. They were able to learn using their mobile phone manuals or guidelines, or followed the instructions on their mobile phone menu

[167] These are often on Television and Billboards.
[168] This is because English is the official language in Ghana. Sometimes some bill boards have a statement written in Akan (Twi) in addition to English statements. One therefore needs to be literate in English and the local language to understand the advertisement message.

and settings. These women traders tend to have a higher secondary education than their other trading colleagues, reflecting a dimension of digital inequality with regard to educational differences. These traders being able to learn how to use their mobile phones all by themselves shows that they can read in English. (This is because mobile phone manuals are in a variety of international languages for users to choose the language they are conversant with). English being the official language in Ghana and the predominant means of social interaction, mobile phones brought to Ghana have language features set to English. In choosing to read the manual of your mobile phone in Ghana, the English language is the option chosen. Those who learnt how to use their mobile phones on their own were able to read and follow the instructions on the manual enabling them to know how to operate their mobile phones.

On the other hand, the majority of women traders (33 out of 45)[169] were taught how to use their mobile phones by their children. :

> My third born child taught me how to answer a call, check on a missed call and also make a call. I did not go to school to a higher level so I was not able to use it easily at first (interview # 38).

> Whenever I buy a phone and I do not know how to use it functions, I ask my children to teach me how it is used to make calls, after sometime then I learn how it is done (interview # 30).

The social support to make calls came not only from children, but was also received from husbands. Less than a third of the women traders were taught how to use their mobile phones by their husbands[170]. A little less than one tenth also learnt how to make calls from their siblings[171] and from mobile phone traders or the shop owners[172] from whom they bought their mobile phones:

> (*She laughed*) my sister taught me how to make call the very first time, she has a higher education than I do (interview# 26).

> The person I bought the mobile phone from taught me how to receive and also make calls (interview# 49).

[169] Total here is 45 as 27 of the traders interviewed claimed they learn how to use their mobile phones on their own.
[170] 6 out of 45 women received support from husbands in using their mobile phones.
[171] 4 out of 45 women received support from their siblings in using their mobile phones.
[172] 2 out of 45 women received support from the mobile phone trader or shop owner in using their mobile phones.

Over the years the traders interviewed have learnt how to make calls on their own and they demonstrated their capabilities to make calls to me during the interviews. It is clear that the digital literacy levels of women traders interviewed are low and given that most of them were born before the era of the new digital technologies, they face challenges in using mobile technologies and services available on their mobile phones owned. As mentioned earlier mobile phones brought to Ghana have menu instructions in English. Children often need to provide support to their mothers, particularly when first using their mobile phones. We may therefore describe these children of women traders as 'digital natives' and the women traders as 'digital migrants'or 'digital immigrants'. This study finding reflects intergenerational differences in the use of digital technologies.

The fact that some of the traders after acquiring their mobile phone needed the support of their children reflects a type of digital inequality that exists between these participants and their children, husbands and siblings. As DiMaggio & Hargittai (2001) argue the need for support in using technology is a dimension of digital inequality. All the participants who receive the support of husbands and or siblings[173] argue that they are able to gain support from their husbands and or siblings because they have higher education compared to what they have. This suggests that social networks are vital in the use of mobile phones among users with low educational levels and who lack various forms of literacies.

Educational status and literacy levels as well as the various forms of literacies are not the only associated factors that limit the use of mobile phones beyond their basic functions (calling and texting). The perceived ease of use of mobile services and application is also attributed to mobile interfaces associated with the type of handset model owned. The complex nature of mobile interfaces (e.g. 2G) loaded to accommodate all the available alphabets, letters, numbers and punctuations requiring multiple key presses and taps to engage in messaging function to an extent determines the use of mobile services such as SMS and Facebooking. This therefore suggests that one needs technical literacy to be able to navigate the keypads to enter text on such mobile phones.

As noted early on the traders interviewed preferred calling to texting. Therefore, with regard to making calls they have gained experience[174] over the years because they are able to

[173] That is in total 10 women receive support from husbands and or siblings.
[174] These women demonstrated their calling ability as a result of support from their children, husbands and siblings to me during the interview.

differentiate between the green and the red button on 2G[175] (and 2.5G, 3G) keypads to make calls all by themselves. This is because the keypad of 2G (and sometimes 2.5G, 3G) mobile phones has green and red key icons which are used to make and receive calls and these are easily identifiable. The green and red icons on the key pad are not combined with any other letters or numbers, therefore easy to use when taught. The green and red keypad is one of the main interfaces of most 2G mobile phones: the type of mobile service that predominates among the participants. 3G mobile phones have complicated interfaces: they sometimes have the keypad with the red and green button key pads but most have more complex visual interfaces, often with touch screens. 3G mobile phones with touch screens[176] are not common among traders as they claimed that they cannot easily operate these mobile phones, as the keypad is hidden or embedded.

Considering the educational levels and ages of traders interviewed, as well as the nature of market activities, traders find it difficult and might not have the time to be involved in such complex task of making multiple presses and taps to assess services beyond calling owing to the type of mobile handset they owned This could be one of the reasons why these traders have no interest in text messaging and tend not to go further to explore the other features of their mobile phones. From this finding it would appear that the complex nature of keypads or mobile phone interfaces apart from educational status and age play a significant role in assessing of mobile services.

Inequality was also noted in the context of loading credits onto mobile phones. Here social support was also received from children and husbands (in some cases siblings) in the loading of airtime for the very first time. All the women traders who receive support from their husbands (or siblings) opined that their educational level is higher than them, the women traders, reflecting the reason why they can grant them such support. Inequality in education (coupled with the complex mobile interfaces) is what has led to the receiving of social support among these traders. This reflects a dimension of digital inequality. Nonetheless, based on support received from children and husbands or siblings the majority of women traders (30 out of 45) appear to have developed the technological know-how to navigate their complex mobile interfaces to load credits on their mobile phones.[177] It would seem these women are able to engage in loading of credits easily after receiving support (compared to

[175] See Appendix 3 for mobile phone interfaces.
[176] 15 out of 72 women interviewed own mobile phones that support 3G mobile services. Five of them own 3G mobile phones with touch screens.
[177] These women demonstrated their loading credit ability to me during the interview.

texting) owing to their knowledge about figures or numbers as they deal with figures or numbers on daily basis due to the nature of their business. [178]

As noted earlier, a small proportion of women (19) traders interviewed who can send and reply to texts also did so by way of knowledge acquired from their children, e.g. by differentiating between the alphabets and numerals on their key pads. This reflects another dimension of digital inequality with respect to social support gained from children.

With reference to storing contact numbers and names, adequate technological know-how has not been attained by the majority (61%) of the women interviewed because they find it a bit complicated. Some of the women traders explained that they have been taught several times by their children how to store their contact numbers and names but were still unable to do so. They usually make the one who wants his or her number to be stored dial the number on their mobile phone and then they beep the person once (flash) which enables the number to be stored automatically in their dialled numbers menu. They then keep the last two digits of that person's number and name in memory and when they go back home, the women traders ask their children (or grandchildren) to store it in their contacts or phonebook. Another way is that they write the number down in a book [179] and when they are home, ask their children (or grandchildren) to store it into their contacts or phonebook:

> To be honest before God, I will not be able to do it [store a number]. I know if I have to make a call, I will press here and all my numbers on the phone will appear, (*she demonstrates how it is done*). If you decide to give me your number, you will have to save it yourself and when I press here I will see it, that is all but as for doing it myself, truly speaking I will not be able to do it (interview # 32).

> No I can't but then I will dial the number and beep the person and then the number is saved on the mobile phone. I make sure I keep the last two digits of that number in memory and when I get home, I tell my daughter to save it with the name for me (interview # 46).

> My children store the numbers on my mobile phone for me, I do not. When someone gives me her number I write it down and when I get home I call my son, hey 'Junior'

[178] These women calculate amounts of goods bought which tend to enable them have an idea about numbers.

[179] The memory and writing of numbers in a book reflect their literacy levels in numeracy. The storing of contacts involve numbers in addition to alphabets with reference to names and coupled with the mechanism involved (considering the majority owning 2G mobile phones), the women explained that this makes it a bit complicated in storing their contacts.

> this is one of my customers number and she is called so and so and then I give it to him and he stores it. Or I call my daughter Serwaa to do it (interview # 7).
>
> … my children and sometimes my grandchildren teach me how to make the call, if I want to make a call and they are around, I call them to assist me to search for the contact name and then they dial or make the call for me. I can make calls now. My grandchildren were the ones who even store all my contact numbers on the mobile phone for me (interview # 20).

Other traders interviewed gained support from their husbands to store their contact numbers for them:

> My husband bought the mobile phone for me and he stores the numbers for me, he taught me how to make call but now I know how it is done. I always keep the last two digits of my contacts in memory, so whenever I want to make a call, I go through the contacts and check the names that tally with the last two digit of the person I want to call, and then I make the call (interview # 31)

The preceding discussion shows that the use of mobile phones among the traders interviewed is based on knowledge they received from informal education through their social networks: their children, husbands and siblings. Also, these traders limited technical literacy is not only associated with their low education but having their social networks (children) with them to support them in exploring the features of their mobile phones. From this finding, using mobile phone services such as texting could be due to the complicated nature of mobile interfaces (i.e. 2G owned by the majority women traders) coupled with the complex task of navigating such complicated keypads, as well as the hectic nature of the work (market trade) the women were involved in. The finding may also suggests that the type of contacts one has influence one to be engaged in SMS/texting as contacts should be able to read or decipher messages sent to them and to reply. [180]

Even though the majority of the women interviewed cannot store their contact numbers all by themselves, they can easily identify their contact menu or phonebook to make calls. Some of them are able to keep in memory the last two digits of their contact numbers which enable them to easily identify who to call when they scroll through their contact list or who is calling

[180] This argument is based on women who text (that is 19 participants) reporting that they send text to only their contacts who can read or decipher messages sent and to reply. (Full details already noted above under sub-heading 5.4.3.)

whenever they receive a call. The ability to keep numbers in memory explains the good knowledge women traders have in numbers or figures which suggests that these traders are not entirely illiterates as they have understanding of numbers that enable them keep their own records[181]. It is clear that even though most the women traders are unable to store their contacts numbers all by themselves, they do not lack absolute knowledge in using their mobile phones. This is because they are now able to make calls on their own and use their phonebooks as well as load credits based on the social support received from children, husbands and siblings.

Even though the majority of these traders are born before the era of computers and mobile phones with its associated ICTs, women traders after gaining some social support and training from their social networks (children, husbands and siblings) have gained technological know-how or knowledge to easily dial numbers and make calls and load their airtime/credits onto their mobile phones. This study finding suggests that with time they might be able to utilise the services of their mobile phone beyond voice calls after gaining social support and training from their social networks. This could lead to the use of services on the internet such as mobile banking.

It was realised however that those traders (27 out of 72) who learnt how to use their mobile phones all by themselves can easily make calls on their own, store their contact numbers and load credits on their mobile phones. This suggests that learning on one's own paves the way for one to acquire more knowledge and hence gain technological know-how in using a technology. The finding in relation to these women traders[182] suggests that educational status play an important role in the using of mobile phones.

The utilisation and enjoying all the mobile services of a mobile phone owned could offer are determined by having adequate knowledge and various forms of literacies[183]. The inability to enjoy the full benefits from one's mobile phones compared to others who enjoy the full benefits shows a disparity, that is inequality in use. In Accra many mobile phone users particularly the youth and young adults are able to fully explore into their mobile phone services and use them (Amoah-Darkwah, 2014). This suggests that this group of people have technological know-how, because they are born in the era of these new information and

[181] These women are conversant with numbers or figures as they deal with them on daily basis with reference to prices of their goods. They can easily make calculations when customers purchase goods from them.
[182] That is the women (27 out of 72) who claimed they learnt how to use their mobile phones all by themselves. These women have higher secondary school as noted already above (see sub-heading 5.5.1).
[183] These are literacies associated with technical literacy, basic language literacy and information literacy as noted earlier.

communication technologies (ICTs) and understand their functions. Intergenerational differences therefore associated with digital inequality, as age differences create a dimension of inequality between this category of people and those who were born before these new technologies were introduced. This is the exact situation of the traders interviewed. Noting their ages and their educational backgrounds, the majority of these women do not have the necessary knowledge about all the features and services of their mobile phones. This suggests a lack in the autonomy of use of their mobile phones owing to receiving support from children, another dimension of the existence of digital inequalities among them.

5.5.2 *Challenges associated with Mobile Phone Use*

In utilising the services of mobile network providers, challenges are faced by mobile phone users. One major challenge Ghana mobile network providers face is network problems. More than half of the traders face challenges when using their mobile phones. Poor networks were noted as the major challenge:

> The biggest problem I have with the mobile phone is that the time you are chatting with someone then the line cuts or goes off. This occurs when you really need to make a call urgently. Another problem is that you will receive a call and you try calling back and you will be told switch off. As for the mobile phone we are using it but it is giving us a problem that is resulting in losing our customers. When you really need to make an important call then the network fails you by telling you the one you are calling have switched off his mobile phone (interview # 14).

Expensive call charges and airtime being lost without being used and taken (i.e. cheating of credits or airtime) by mobile network providers were also mentioned as challenges faced by women traders when using their mobile phones.

5.6 Conclusion

This chapter has presented the discourses of women traders in the four markets with regard to mobile phone access and usage patterns. The findings show that the traders have three strategic groups in their network of mobile phone use: suppliers, customers and families. They use their mobile phones predominantly for economic activities and for social connectivity. With regard to their economic activities, they use their mobile phones to coordinate their trading activities with their trading partners: customers and suppliers. With

regard to social connectivity, the women use their mobile phones to call their families, friends and loved ones.

Texting, despite being a cheaper option than calling was not a common phenomenon among the women traders in this study. This can be attributed to low educational achievements and a lack of literacy in both English and the Ghanaian local languages: as well as the complex nature of mobile interfaces[184] that makes it difficult to navigate such key pads. Therefore women traders believe that the making of calls is sufficient for conducting their trading activities. It also came to light that women traders in the selected markets in Accra use their mobile phone's calculators, clocks and alarms in their economic activities.

This chapter focused on the functional knowledge or technological know-how associated with the use of mobile phones. It came to light that there exist digital inequalities, in the form of unequal education and age differences, among the women traders interviewed as they gain social support from their children to use their mobile phones. This was explained as a result of age differences with regard to children of today understanding the digital revolution or age and its associated technologies. Inequality was also noted among women interviewed as those with higher educational levels are able to use texting and the other services of their mobile phones without any support from their children. Further age differences with relation to some of the traders being younger and therefore able to use their mobile phones beyond voice, as they have knowledge and understand the digital age.

These discourses will be analysed in detail in the final chapter. The next chapter will examine the discourses of women traders regarding the effects of mobile phones on their market trading activities and their social lives.

[184] This refers to all the mobile services owned by these women (2G, 2.5G and 3G). However, with 2G mobile phones being predominant among these women interviewed, such keypads seem complicated as several taps need to be done in order to involve in texting.

CHAPTER SIX

THE ROLE OF MOBILE PHONES IN THE MARKET AND SOCIAL LIVES OF WOMEN TRADERS IN ACCRA

6.1 Introduction

The previous chapter presented the patterns of mobile phone use among women traders involved in their economic activities and highlighted differences in the use of mobile phones with respect to age and education. It was noted that the majority of the women traders were unable to utilise all the mobile services their mobile handsets could offer in order to enjoy their benefits, therefore tending to use their mobile phones primarily for voice calls. How have these patterns of use affected their trading businesses? To what extent has the perceived effect of mobile phone on their business performances affected their social lives.

This chapter explores the perceived effects of mobile phones on the performance of market activities and explores the extent to which these effects on business have spilled over into the social lives of the women traders. In this chapter I present firstly the number of years the women have been involved in trade and then discuss when they adopted mobile phones for use in their businesses. I will then examine the perceived effects of mobile phones on their trading activities and social lives. The chapter ends with a discussion on the manner in which mobile phones affect issues of trust: trust among women traders and trust in the information they exchange.

6.2 Background information in the involvement in market trade and access to mobile phones

In Ghana women predominate in market trade and a trading business is often passed from one generation to another, most often to female children. Most of the women have therefore been in market trade for a quite a long time as they were trained at a younger age and most inherit their parents businesses (in some cases other relatives). Of interest to this study is how the integration of mobile phones in trading activities has affected the performance or development of these activities. Therefore establishing the number of years in market trade and the period in which one acquired mobile phones could enable traders to recount the perceived effects of mobile phones on the performance of their trading activities. For while mobile phones were introduced to Ghana in the late 1990s, 2003 and 2004 mark the period in which most people adopted mobile phones into their everyday activities (Frempong et al.

2005). It is therefore important to know how long the women traders interviewed have been in trade and when they adopted mobile phones into their lives and trading activities, in order to get a clear picture of the effect of mobile phones on their trading activities and social lives. In this context how long these traders have been in trade and the number of years they have owned mobile phones was explored.

6.2.1 Number of years in trading

In Robertson's (1995) study – she refers to a family in Accra where five generations of women had been in market trade. Many women traders interviewed in the four markets have been involved in market trade for a long period, because trading is often learned at a young age from mothers and relatives, and this facilitates the handing over of trading businesses to children[185] (particularly daughters and nieces). The finding of the study showed that more than half of the women interviewed have been trading for at least eleven years, with only a few[186] women having traded for less than two years.

The writing of Clarke (1994) shows that most women with little or low education tend to engage in market trade to earn a living. Clarke's writings therefore suggest the fact that in the past women did not aim to achieve higher educational levels; this was not a priority because they had business opportunities that they tended to inherit from their parents. From the interactions and narrations of traders, most traders interviewed got involved in trading after completing their basic education. This study finding might explain why low educational attainment accounts for most women being found in the lower echelons of employment. This also suggests the low level of literacy of women in Accra and Ghana.

As discussed earlier, most women in Ghana with low educational status and low literacy levels tend to be found in the informal economy. This is as a result of formal economy requiring higher formal education and qualifications due to industrialisation and emergence of Capitalism in Ghana. This suggests that a higher education and the necessary qualification provide people with better opportunities in employment in the formal economy. However people with higher education and qualification are involved in micro-trade – informal economy – in Ghana (for instance as noted in chapter five some of the traders have higher educational levels and are found in market trade). This finding clearly shows that in these contemporary times women are getting involved in informal trade even though they have

[185] In the case of male business, inheritance is often by their male children.
[186] Three traders interviewed have been in trade for less than two years.

higher educational levels. Anecdotal evidence suggests that Ghana's informal economy is gradually absorbing the graduate unemployed as many seek to establish micro and small scale businesses of their own. This is because of the increasing rate of unemployment stemming from the formal economy being unable to absorb these qualified people.

Irrespective of the extent to which low levels of educational attainment is a factor for most women involved in trade, in Ghana (market) trade tends to be a lucrative job opportunity. As discussed in chapter two and four, Ghana's market trading constitutes a hierarchy based on type and scale of activity and consists of wholesalers (itinerant trades), wholesale retailers, retailers, petty traders and street hawkers[187]. These categories of traders are not of the same socio-economic status in the aspect of income. As also noted earlier in chapter two, wholesalers and retailers of urban areas in Ghana are very much well to do and earn better incomes than those in petty trade and hawking[188]. In other words, wholesalers and retailers of urban areas are perceived to be richer than people in formal employment (e.g. civil service) in Ghana. This suggests that market trading in urban Ghana appear not to be an employment opportunity for the poor as traders' incomes are much better than most workers in the formal economy. In light of this and considering that the participants of this study are urban wholesalers and retailers and located at the apex of the trading hierarchy, they are not that poor with respect to incomes.

The narratives from these women could suggest that their business activities are lucrative and serve as employment opportunities for children and even for children with higher education levels that are unable to be employed into the formal economy based on the aforementioned reasons. This could account for the inheritance of parents trading businesses as children are socialised by their parents to take over their businesses. Such socialisation starts from young age as they occasionally assists their mothers in the markets while pursuing their education. Most often where children end up with no better employment opportunities than that of their parents, they inherit that of their parents. This explains why most traders tend to learn their trading skills from parents and tend to have been involved in trade for a significant number of years.

[187] See details in chapter two and four (also c.f from Overa, 2006).

[188] There appears to be in existence high internal stratification of incomes in Ghana's informal trade with profit margins varying based on type and scale of activity.

6.2.2 Period of mobile phone ownership

Given the rapid adoption of mobile phones in Ghana during the late 2003 and early 2004 (Frempong et al. 2005) and given that the majority of the women interviewed have been in market trade for at least eleven years, I explored whether the traders interviewed owned mobile phones before they started business or not. It was realised that more than two thirds (55 out of 72 participants) of these traders acquired their mobile phones when they were already involved in trade, the remainder owning mobile phones before they got involved in trade. The findings of the study show that majority of women traders interviewed have owned mobile phones for at least seven years. This corresponds with the peak period mentioned by Frempong et al. (2005) during which the majority of Ghanaians adopted mobile phones. Most of these women integrated mobile phones into their lives and activities during this period.

Unarguably the exchange of information within trading networks is essentially for successful market trade. A study (Frempong, 2009) conducted in Ghana among micro and small trade enterprises in Ghana show that mobile phones have been integrated in micro-trading activities and have become a versatile technology for economic activities. Thus mobile phones are an indispensable communication means for business activities, particularly considering the dispersed nature of market networks in Accra and unreliability of other means of communication (e.g. unreliable middlemen, scarce fixed landlines, poor road networks etc). Women traders interviewed have therefore become part or joined the mobile phone era, to show their 'identity' and a 'sense of belongingness' in the digital world. This is because of the acquisition of mobile phones by these women owing to their businesses which in turn suggest the important role of mobile phone in their activities.

6.3 The perceived effects of mobile phones on informal micro-trading activities in Accra

The innovative application of mobile phones and their perceived impact on micro trading has been noted in numerous studies (Overa, 2006; Molony, 2006; Abraham, 2007; Aker, 2008; Jagun et al; 2008; Frempong, 2009; Boateng, 2010; Kwakwa, 2012). The participants in this study acknowledged that the integration of mobile phones into their business has significantly affected their market activities.

From the narrations of participants, six main themes emerged relating to the effects of mobile phone integration in economic activities:

- improved access to market information;
- better accessibility to and improved relationships with other traders and customers;
- trust building and risk taking;
- the extension of business networks;
- the curtailment of transport costs; and
- good profits margins.

6.3.1 *Improved access to information with traders and their networks*

Successful trade involves information exchange (or information sharing) and cooperation with others in the chain of distribution. Information is therefore vital in the distribution of goods. As mentioned previously, women traders in Accra are faced with information asymmetries owing to the spatial dispersion of traders and their trading networks. The enhancement in access to business information was acknowledged as one of the significant effects of mobile phones on micro trading activities. Mobile phones enable all the traders interviewed to have ready access to market information on prices, and the availability of goods and suppliers. Mobile phones have therefore allowed traders to easily liaise with their trading networks leading to better coordination with their trading activities in geographically distant locations. This in turn enables all the traders in this study to have knowledge of business information without being physically present. The ready access to market information (or easily sharing of information) owing to the presence of mobile phones was acknowledged by all the traders interviewed in the markets selected for the study: both the wholesale and retail traders in vegetables and textiles, as well as queen mothers, emphasized this effect of mobile phones on trade. A vegetable woman trader in Kaneshie market narrated:

> I am able to call my suppliers from the bush (farmlands) when they are there to find out about the prices and where they have gotten to when they are returning. The mobile phone has been helpful (interview # 66).

A vegetable trader in Agbogbloshie market also recounts:

> Without a mobile phone you will not know when the suppliers will be arriving unless you contact them or you will not have any idea about the quantity of goods your customers need and when they will be available to pick it, you have to get all these information with the use of your mobile phone. You need to be in touch with the

> suppliers to find out if they have goods for you or not and when they will be arriving otherwise you lose out (interview # 28).

A vegetable queen mother in Makola market states:

> It is all because of this business, without a mobile phone you cannot do this business successfully. Our goods sometimes arrive around midnight, maybe at 12am or 2am, how will you be able to know if the suppliers have arrived or not or how will the supplier know if you need some goods or not when you do not have a mobile phone (interview # 46).

The textile queen mother in Madina market puts it this way:

> With our mobile phones we can get all the information we need for our business. Our goods are also brought from Togo and Ivory Coast. Therefore whenever I run out of goods [stock], I call my suppliers to check if there are goods available and then tell them the quantity of cloth I need. Also, when I need a particular type of design, I am able to call them to bring those designs to me (interview # 72).

Price information is crucial in the distribution of goods to customers or retailers for a successful trade transaction. Therefore in situations where there are changes in prices, retailers or customers need to be informed to avoid frustrations and distrust. Such occurrences have been noted in prior studies, for instance Molony's (2006) study in Tanzania, where price changes resulting from delay in communication and delivery of goods created a situation of distrust and frustration between traders and customers. Among the participants interviewed, a number of traders, mainly wholesalers (20 out of 36) used their mobile phones to maintain constant contact with their retailers or customers in order to update them on any changes in prices.

6.3.1.1 A bane or blessing? Price information and bargaining power

Mobile phones also provide suppliers with access to price information and this gives them greater bargaining power in transactions with market traders. The market traders explained that mobile phones have been useful for trading except in the case of prices. Wholesale traders, and particularly those in the vegetable trade[189], pointed out that sometimes they have to purchase their goods at expensive prices and trying to compare prices to get a better deal

[189] This was pointed out by all the 25 wholesale vegetable traders interviewed in the four selected markets.

ended up being unfruitful. The presence of mobile phones has provided easy access to price information among suppliers and or farmers. Suppliers and or farmers on different farmlands can easily check the prices of goods sold by their other colleagues and can also call to find out how much traders in the markets sell their goods. With such price information available to farmers and or suppliers, it is not as easy for traders to bargain for prices as it was during the period before mobile phones. A vegetable trader reinforced this point and narrated:

> I sell carrots, first we use to go to Togo to bring the carrots. When we get there on the farm, we only negotiate the prices with only the farmer, those times there were no mobile phones and after the negotiation and we reached an agreement, then we buy the goods and bring them to Accra. With the introduction of mobile phone, when we get to the farm and start bargaining with the farmer, he will call another farmer colleague in another place to find out the price he sold his carrots, so if you offer to buy at a certain price maybe 30 Ghana cedis, he will not agree or accept because his colleague price is much higher. So the mobile phone has made the price of goods to go up for us unlike the first when there were no mobile phones that we bargain with only a farmer and price agreed on is between the two of you (interview # 30).

This suggests that access to price information has resulted in increasing the bargaining power of suppliers (particularly farmers or suppliers on the farmlands and hinterlands who previously were not able to access such information) and reduced that of wholesale vegetable traders. This improved access to information no matter the distance reflects the wide-ranging penetration of mobile phone network services in Ghana, including the hinterlands or rural areas. Mobile phones have afforded information inequality that previously exist among farmers appear to be eliminated as they are able to contact other farmer colleagues about prices.

6.3.2 *Improvements in accessibility and relationships between women traders and their customers*

The introduction of mobile phones to market trading has facilitated easier accessibility of women traders to their customers or retailers and vice versa. The use of mobile phones in trade enables traders interviewed to easily get in touch with their customers to notify them about availability of goods or new arrivals of goods. As a result of access to mobile phones, these traders are able to find out about their customers well-being, particularly when they have not been seen for a while in the market. On the other hand customers can easily contact

wholesale or retail traders to check their availability in the market and enquire about goods or make orders. This point of easier accessibility was acknowledged by all the women traders in the selected markets. A textile trader in Makola market reinforces this point and states:

> For instance if a customer or a friend of a customer needs some of my cloth (textile) or scarfs, they call to make the order, more often such orders are for engagement (marriage) as you know that we present scarves and cloth during our engagement ceremony. Sometimes too customers call to find out if I have cloth then they make an order for a friend's birthday or for funeral they have, here they order for the black cloth when is for funerals. I also call them when I have a type of textile they usually order for … (interview #1).

A vegetable trader in Kaneshie market also narrated:

> Sometimes my customers call to find out if I am in the market when they want to purchase some of the tomatoes. If I have not seen a customer for a while I am able to call to say 'hello, how are you'? I am able to call customers too to inform them that I am available in the market. Mobile phones have helped us a lot (interview # 66).

The two extracts[190] examples above are good summation of how mobile phones facilitate accessibility among traders in the study and this has led to a large network of trading networks to be accessed in a wider geographical area. This in turn has helped to maintain and strengthen relationships between traders interviewed and their customers. This improvement in accessibility and the strengthening of relationships owing to the use of mobile phones in micro-trade are described by Boateng (2010, 2011) as "relational benefits". Such relational benefits have been exhibited among women traders in this study as mobile phones are playing a significant role in their social connectedness and have accelerated as well as deepened trader's relationship with their trading networks.

6.3.2.1 Better planning and decision making

Market information is essential for timely and better decision-making which in turns leads to successful trading transactions with trading networks. Wholesale traders – particularly those involved in vegetables trade – have benefited because mobile phones enable them to contact each other to easily schedule and organise themselves when travelling to the hinterlands to

[190] These are just two quotations cited from 65 out 72 women interviewed who acknowledged that mobile phones have facilitated easier accessibility with trading networks in dispersed locations.

purchase goods. Suppliers or farmers can easily get in touch with them to inform them when goods have been harvested and are ready to be sold. The use of mobile phones in market trade has improved access to information and accessibility among traders and suppliers or farmers and has led to better planning and decision making. The women interviewed acknowledged that they are able to make reliable decisions in relation to their journeys to purchase goods making them to organise their homes and social lives. In other words, women traders particularly wholesalers in this study therefore tend to have a high sense of control over their trading businesses and domestic or personal lives owing to the making of better decisions.

6.3.3 *Trust building: risk taking and debt tracking among women traders*

Mobile phones are playing an important role in building of trust and even in situations where a network of business relationships does not exist. This is because mobile phones have enabled users to share contact numbers with each other, making it easy for them to stay connected. The study findings show that as a result of the sharing of contact numbers, some women traders are willing to take risks by extending credit to customers, on some occasions even first-time customers (often retail customers). One textile trader narrated thus:

> … I do not know her at all from anywhere, I only asked for her mobile contact number then I gave her the cloth, so if it had not been her having mobile phone, we could not have had such a relationship. I don't know anything about her, what she does or where she lives, I only have her mobile phone number. So if she decides to change her number by throwing away her SIM card, then my money turns to a bad debt. But I know she is God fearing and even her phone gets missing, she will come and pay her debt (interview # 4).

The traders from the selected markets express trust in their customers: including first-time customers (often retail customers), because they believe the customers to be God fearing and thus likely to pay their debts. This belief seems to hold even when customer phones are lost or stolen and in cases where customers change their SIM cards. Some of the traders argued that relationships are sometimes risky, but they trust that their customers are God fearing. They pointed out that even though it is risky to sell on credit, it is all part of doing business – no matter how long it takes the customers show up to pay their debts. This attitude was echoed by numerous wholesale traders (30 out of 36). For example, one woman argued that:

By the grace of God they will not. They always do come to pay their debts. For instance I have one customer who I have been dealing with for the past 15 years and I do not know her house except her contact number but she comes to buy on credit and always come to make the payment (interview # 48).

6.3.3.1 Risk management

The traders interviewed point out that they are able to manage the risk of selling on credit to customers and tracking their debts. This is because the use of mobile phones in market trade also helps them to remind their customers of their debts:

> At first when there were no mobile phones, unless you see the person before you can communicate with the person but with the mobile phone even if the person is far off, you can easily get in touch with the person and what you want you can easily achieve it. Even if someone owes you, you can easily call the person on the mobile phone and say I need my money on this or that day and the person will be able to bring it, so the mobile phone has helped me a lot in my business (interview # 24).

6.3.4 *Widening of business and trading networks among women traders*

Even though the contact numbers are the only information women traders have about their customers, relationships that exist between customers and traders have strengthened leading to trust building. This has also led to an increase in customers for the women traders as a result of risk-taking through the way of giving credit – even to first time customers:

> ...mobile phones have enabled me to get more customers and also given my customers the chance to trust me. This is because they can easily get in touch with me whenever the need arises (interview # 14).

> I have gotten more customers than I used to have and my customers can easily call me to make their orders which enable me to know the quantity of goods I should also order from my suppliers. It has also helped in expanding my business (interview # 40).

The participants point out that with the increase in customers and improved relationships with their customers – the result to mobile phone use – has led to the widening of their businesses and social networks. The widening of businesses and social networks due to the use of mobile phones in trading activities is predominantly among wholesale women traders of both

perishable (vegetables) and non- perishable goods (textiles). This present finding seems to support the argument that the existence of trust can promote the growth of an individual's business networks which could, in turn, promote greater economy activity (Mehta et al; 2011). From this study finding the presence of trust owing to sharing of mobile phone contacts has contributed to development of traders and their social networks, therefore providing the opportunity in expanding their businesses. In other words, trust has become the cornerstone for the development of trading networks of women micro trading activities, a reflection of the nature of informal economy of Accra.

6.3.5 Mobile phone and face to face interaction: Reduction of movements and journeys

Numerous studies, for instance Kamaga (2006) in Cote D'Ivoire, Overå, (2006) in Ghana, Munyua and Mureithi (2008) in Kenya, Jagun et al. (2008) in Nigeria and Frempong (2009) in Ghana, show that the use of mobile phones in micro-trade reduced long distance travels, movements and transport cost. The traders interviewed point out that with the improved access to market information, the need to travel from one place to another to find out about prices and the availability of goods has been reduced. Unfruitful journeys, in terms of scouting for scarce goods or travelling to purchase goods when you are short of supply, have been replaced by a mobile phone call to enquire about the availability of the supplier and goods before making any movements:

> As for the mobile phone it has been useful, it has really shorten our movement from one place to the other, for instance if I have no goods, I will not have to go all the way to Makola market to find out if there are goods available, but with the mobile phone, I easily make a call to find out if there are goods or not before going there, if there is none, it does not make me waste my time by going there before getting to know (interview # 40).

Even study participants[191] who for various reasons are not able to join their colleagues on the farmlands or are unable to meet suppliers when they arrive, can order their goods through a mobile phone call and their orders are delivered to them through a driver who supplies goods to other traders in the market. A vegetable retail trader in Kaneshie market narrated:

[191] This refers to both wholesalers and retailers in all the selected markets in Accra. The majority of these traders (50 out of 72) acknowledged this assertion of how orders can be made with just a mobile phone call and delivered to them when one is unable to go to the farmlands or meet suppliers in the market upon their arrival.

> Mobile phones have been very useful, now instead of me going to Agbogbloshie market to personally purchase my goods, I can just call the supplier, make my order and it is sent to me here. This has really reduced that movement and journey from here to Agbogbloshie market. With just a call I am able to save transport cost (interview # 65)[192].

My further probing in relation to movements among traders revealed that the decrease in movement to transact business has influenced face to face interaction. The need for physical presence in exchanging information, purchasing and ordering of goods – particularly among textile wholesalers and retailers – has minimised drastically. Therefore the sole dependency on face to face interaction seems to gradually decrease with mobile phone presence among non-perishable goods traders:

> ...The mobile phone however is useful because instead of wasting so much money such as 50 Ghana cedis to travel to a place, you can easily use the mobile phone to make a call by just buying 2 Ghana cedis worth of credits or airtime, so nowadays you do not need to see people face to people before you can transact business with them (interview # 45).

Mobile phones however have not totally eliminated physical face to face interaction. This is because the situation appears to be different among vegetable wholesale women traders, who often travel to the hinterlands or farmlands to purchase goods. Even though they access price information and order goods from farmers and or suppliers via mobile phone, they normally go to purchase their goods themselves based on face to face interaction with suppliers or farmers. Yet in situations where a wholesale vegetable trader is unable to make it to the farmlands, the trader is able to make orders from her supplier and these are delivered to her through her other trading colleagues or drivers bringing goods to Accra. In this situation there is no physical encounter with the supplier, therefore face to face interaction is minimised due to the use of mobile phone in trade. Even though there is a minimisation of physical interaction with suppliers, there is development of frequent and constant interaction at greater distances from market places as traders via mobile calls can make orders and access prices, a reflection of the role of mobile phone maintaining connected presence among traders and their trading networks.

[192] Some of the Kaneshie market vegetable retailers purchase their goods from wholesale vegetable traders in Agbogbloshie market. The woman interviewed is one of these traders who purchase goods from Agbogbloshie. Kaneshie market is predominantly a retail market as mentioned earlier.

6.3.6 *Comparative advantage of earning better incomes or profits: reduction in transactional and transportation cost*

Considering that the success and continuous involvement of any business transaction depends on the income or profit earned, among other factors, I explored whether the integration of mobile phones into the traders in this study activities has affected their incomes or profits earned in any way. The participants confidently acknowledged that their incomes or profit margins have improved due to the presence of mobile phones in trade, even though none of them interviewed in any of the selected markets was willing to say how much they earned. I believe the good profit margins figures or amounts were not revealed by these traders owing to fear of probably taxation and lack of records kept. It was also difficult to access such income data from market women since it is usually delicate or personal. However the traders were very emphatic about the contribution of mobile phones to increase their profit margins.

The traders (i.e. 55 out of 72), particularly the vegetable traders point out that with the use of mobile phones in trade, they are earning better incomes. This is because of the reduction of movement and transportation costs as well as wastage. They argue that before mobile phones provided the opportunity to access market and price information, ordering of goods among other factors, it is time consuming and costly as they have to physically travel to the farmlands or on long journeys (in the case of wholesale vegetable traders) or to factories or outside the country (in the case of textile traders) just to obtain or deliver information such as checking on prices, availability of goods etc. In this context the longer the distance to transact such trading transactions coupled with intermediaries involves more time, money and transportation cost. With the integration of mobile phones into trading activities, this time-consuming and costly activity is saved as physical travels can easily be substituted with mobile phone calls.

Women traders opined that money is therefore saved on bus fares as movements and journeys tend to decrease owing to the presence of mobile phones. They argued that previously relying solely on physical travels or journeys to access market information, checking on availability of goods and checking on debtors and so on has been cut down by communicating via mobile phone. Women traders interviewed for instance talk for about a call rate of one Ghana cedis (for instance with MTN call rate of 0.13 per minute or Vodafone call rate of 0.19 per minute)[193] which is cheaper than a taxi cost or bus fare for an average of 10 Ghana cedis

[193] NCA, 2015.

given that the call could be completed in less than five minutes compared to a journey of two days or even more to obtain or deliver market information. On average the amount spent on phone calls is about 7 Ghana cedis per week for retailers and between fourteen and thirty-five Ghana cedis for wholesalers. Most women traders point out that they buy one Ghana cedis worth of airtime (in the case of retailers) and between two and five Ghana cedis (in the case of wholesalers) daily to make calls for both business and personal reasons. They strongly affirm that although it is costly to buy airtime to make calls, it is relatively cheaper to make calls to access information whenever the need arises than to physically move to the place or travel for such information. In this situation, the presence of mobile phone in trading activities enables easier connection with trading networks in dispersed location and contributes to the reduction of movements and unnecessary journeys. This in turn reduces transportation cost. With a reduction in transportation cost, women traders opined that their profits margins have turned out to be good or better. A vegetable trader thus recounts:

> ... The mobile phone has been very helpful, if it has not been the mobile phone, I may not have gotten the profits I am earning now, I do not make unfruitful movements anymore, you know I cannot find out if my supplier has goods or not, you know, am able to check prices too. You see with price information I know how to sell my goods when I buy them, the profits has been good and this has enabled me to take care of my children (interview # 50)

I also noted from the wholesale vegetable traders' narratives that the minimisation of losses owing to a reduction in wastage or spoilage of goods was also claimed to contribute indirectly to obtaining of good profit margins among women traders. The traders explained that mobile phones provide the opportunity to easily call retail customers to come for their goods, or to alert them of the arrival of new goods; they also cut the risk of buying in excess, because customers inform the traders about their orders, and this helps to minimise waste or losses. The traders echoed that this opportunity mobile phones offer them in engaging in their activities therefore has led to the earning of better profits from their market trade activities.

From the preceding discussion it is clear that mobile phones are playing a significant and positive role in most of the key aspects of market trading activities among women traders in this study – access to market and price information, easier accessibility to trading networks, reduction in costs and spoilage which in turn lead to better incomes earned. Mobile phones have therefore become a relevant communication means for successful market trade

transaction with its potential of better access to information and saving of cost among traders studied. The study findings clearly suggest that mobile phone enables reduction in physical movements or travels and invariably reduces cost in doing business which in turn leads to earning of better profits. The saving of transportation and transactional cost appears to be very much significant with all trading networks in the chain of distribution having mobile phones to easily coordinate trading activities.

As mentioned in Chapter three, Ghana's market trading activities are affected by informational challenges, poor road networks, unreliable transport and high costs associated with unreliable middlemen. But following the adoption of mobile phones by women traders, these challenges seem to be reduced or addressed as mobile phones tend to compensate such challenges. This is because the use of mobile phones in market activities has reduced the costs associated with information asymmetries and transportation.

6.4 The spill over of the effect of mobile phones in trade on the social lives of women traders

The traders interviewed from the four markets lives cannot compartmentalise and separated into categories such as economic, religious or social because they are all part of the same experience and concerns (Donner, 2008). In this context the study also explored how the effect of the use of mobile phones in market trade has extended to the social lives of these traders.

6.4.1 Mobile phones role in financial empowerment and to become sole breadwinners

Three main themes emerged as the perceived spill-over effects on the social lives of the women interviewed, owing to the effect of the use of mobile phones in market activities. Chief among these is the earning of better incomes that enable the women traders to become sole breadwinners of their families. The majority of the married traders (i.e. 37 out of 50 married participants) point out that they have become breadwinners and the backbone of their families as the incomes of their husbands are insufficient to cater for all the needs (or even basic needs) of the family. [194] The majority of these married women who have become sole breadwinners of their families argue that the financial responsibility has shifted onto

[194]However there are about 13 out of 50 married women interviewed who support and supplement their husband's income. This suggests that although married women are becoming sole breadwinners of their family, there still exist some husbands who support their wives to take care of their families.

them as their husbands' incomes are not sufficient. Because they cannot meet the financial responsibility that tradition demands to take care of their family and households: the women referred to such husbands as 'the living dead'.

The divorced[195] and single women traders also reinforced this pattern of better incomes, essential in earning a living for themselves and providing education for their children. This study finding suggests that women traders interviewed have gone beyond supplementers to become backbones of their families owing to the better incomes earned based on integration of mobile phones into their trading activities. This position is reinforced by almost all the traders in the selected markets who claimed they have good profit margins. For instance a trader in Kaneshie market narrates his experience in the following way:

> Our profit is good. The mobile phone has been very useful, my husband lost his job and through the business I was able to take care of the home... (*trader attended to a customer).* Ok as I was saying I was able to take of my home and pay the fees of my children, if the business was not good, I would have to go and borrow but that did not happen. So what you earn you save it little by little to cater for the family so the mobile phone has been helpful (interview #38).

A study (Dunne and King, 2003) conducted in Ghana among market traders shows that most traders are attracted to the formal economy due to better incomes earned, despite their level of education. As such one cannot entirely attribute the entry into market trade in Ghana to low educational levels as suggested by Robertson (1995) as the better incomes earned seem to make informal economy activities appear 'lucrative'. This study finding suggest that mobile phones have afforded (market) trade to be more 'lucrative' employment opportunity for those who lack employment opportunities (probably in the formal economy), thus have the potential to reduce poverty. This can be explained as a result of better incomes associated with mobile phones. From this empirical finding mobile phones seems to help with the reduction of transaction and transportation costs (due to reduction in movements and substitute of journeys as well as physical interactions) and costs associated with wastage, which tend to lead to earning of better incomes and this may have the potential to attract people to seek employment opportunities in the informal economy of Accra.

[195] These women claim that they do not get the necessary financial support from their ex-husbands to cater for their children.

6.4.2 Mobile phones and savings

The traders claim of their ability to easily start saving[196] for the future was noted as one of the perceived spill-over effects of using mobile phones in trading activities. The traders who claimed they earn good profit margins report that they are able to easily save some of their income in the bank or in the micro credit and financial institutions. In Ghana those who save with the micro credit financial institutions do not have to necessarily go to the offices to deposit their money, these micro credit institutions have agents who often come to the market on specific days for women traders to make their contributions[197] which they send to their institutions at the end of the day. Due to the nature of women trading activities, the majority of them prefer saving with the micro credit financial institutions[198].

Another perceived social effect that emerged from the study is that through the use of mobile phones for business activities leading to better incomes, traders apart from being able to cater for their families, claimed that they are able to without much difficulty make the necessary financial contributions at church or in their religious groups compared to previous times when such contributions sometimes tended to be burdensome. [199] With such a burden and difficulty they point out that they were sometimes unable to attend such gatherings. They claimed that with sufficient incomes or good profit margins they are now able to give or offer the necessary contributions when they attend their religious services or gatherings:

> Oh I am able to use some for tithe and offertory at church and also take care of my sisters. I am able to take care of myself too (interview # 57).

6.4.2.1 Mobile phones and group identity or sense of belongingness

In Ghana being able to meet all the financial obligations with a religious group is important because it earns one the opportunity to be recognised as a member. One gains 'an identity' that makes one feels or have a sense of belonging to the group. This in turn enables one to enjoy other benefits in the group. The women being able to make financial contributions in church could give them recognition (identity) and can lead to enjoying other benefits from the group, for instance gaining of leadership positions and other opportunities in the church. This

[196] 19 traders in this study reported that they started saving when they begin to earn good profit margins owing to integration of mobile phones into their activities.

[197] When a contribution is made by the woman trader, there is a membership card which she signs to indicate the amount she has contributed. The agents of the micro credit institutions keep a copy of all transactions as does the woman trader.

[198] This was an observation made in almost all the markets visited.

[199] 15 out of 55 traders who claimed they earn good profit margins acknowledge this perceived spillover effect of mobile phone on their social lives.

suggests that mobile phones afford better incomes which in turn have led to recognition and a sense of belongingness in a group among women traders in this study.

6.5 Information via mobile phones: A Question of Trust

As revealed above, regarding the women traders' relationships with their suppliers, retailers or customers, trading networks have strengthened and enhanced trust. The trust built among these women was essentially based on existing face-to-face relationships and in some cases first time face to face interaction[200] owing to sharing of mobile phone contacts. Also it was realised from the findings that women traders in this study embraced mobile phones initially for accessing information needed for trading activities with their trading networks. Therefore the availability of mobile phones and the sharing of phone contacts mean the women traders are able to exchange information with their trading partners and social networks. The exchange of information and the coordination of trading activities are built on trust (i.e. reliability and confidence). Trust is vital in the exchange of information between traders and their trading networks. Although traders are able to exchange information with their social networks, do they trust the information received via mobile phones from these social networks? Do they trust business information from their trading partners? Is information received via mobile phones trustworthy? It is therefore necessary to explore trust in the information received via mobile phones and the trading networks of the traders interviewed in this study.

6.5.1 Is exchange of market (price) information via mobile phone trustworthy?

In market trade transactions, one of the key types of information exchanged is information about prices. As Molony (2006) notes, in Tanzania information received on prices by traders on mobile phones tends not to be trustworthy because by the time the goods arrive or are delivered, their prices have changed. Thus trust in price information received using mobile phones is weakened. From my interactions and interviews with women traders regarding prices, it seems that in most cases goods are received at the same price that they were ordered using mobile phones. In cases where there are price changes, they are usually informed through calls from their suppliers or farmers. Among women traders interviewed mobile

[200] That is in situations where goods are sold on credit to a first time customer.

phone information is therefore trusted when it comes to price information. This position is reinforced by numerous (28 out of 36) wholesale women traders in all the selected markets. A wholesale vegetable trader thus narrated:

> Instead of going all the way to Burkina Faso to buy tomatoes and not knowing of the price, I call to find out if there are any tomatoes available and at what price, and through the mobile phone I am given the price. The price I am given on the mobile phone is exactly the same price I buy the tomatoes when I get to my suppliers in Burkina Faso. The mobile phone helps me to organise and manage my business (interview # 8).

A textile wholesale trader in Makola market describes his experiences with the mobile phone in the following narrative:

> Yes I believe him [supplier] about prices he gives me, … you know in business one needs to be straight forward about prices (Interview # 23).

The two extracts above exemplify how price information via mobile phones is trusted among traders in this study. This suggests the vital role mobile phones play in the exchange of information in micro- trade activities leading to successful trading transactions.

6.5.2 Mobile phone information trust weakened: the question of physical location and debts

Mobile phones have been noted in previous study (Chihara, 2000; Molony, 2009; Brinkman & De Bruijn, 2009) to appear to contribute to a platform form for untruthful speaking with regards to whereabouts (locations). Notably the participants' narratives suggest that mobile phones provided the platform for untruthful speaking. This study finding was revealed as a more than one third of the women traders in this study (45 out of 72) opined that trust in information via mobile phones becomes weakened because everyone[201] appears to be deceptive on mobile phones particularly with regard to whereabouts or locations of people. A textile trader in Madina market narrated:

> Now everyone seems to becoming a deceiver with the introduction of mobile phones. But what can one do. You will call someone who might be in Accra [Makola market] but he will tell you he is at Zongo junction [a junction or intersection that enters the

[201] To the traders "everyone" refers to their mobile contacts, which include suppliers, customers and friends.

> Madina market]. You just have to trust what the person said but whenever you wait for sometimes and you realise that person has not arrive then you know that the information you were given was not true. This is because looking at where the person said he is and the time he gets to you, you will know whether he lied or not (interview #72).

A women trader Kaneshie market states:

> (*she laughed*) we all deceive others on the mobile phone, we tell people we are at a place that we are not, so I don't trust people when they say they are somewhere, till I get there and see them then I believe what they have said, otherwise no (interview # 15).

A trader in Makola market put it this way:

> The mobile phone is good but we all use it to deceive others, when we are not here in the market, we say we are here. The suppliers will sometimes tell us they have gotten to Kasoa but they may not have gotten there. People tell lies about being at a place they are not. (*she laughed)* We all do (interview # 22).

Other women traders – and particularly wholesale women traders – noted that in order not to lose a customer, they are also not truthful about their location when customers call them and they have not yet reached the market:

> Everybody lies on the phone, even me. Sometime a customer will be in the market and call me to find out if I am there, and because I don't want to lose that customer, I tell her I am almost there meanwhile I might be leaving the house by then. The customers also lie to us with their mobile phones (interview # 25).

> …the only time we use the mobile phone to tell lies is when a customer is looking for me here in the market and she is here and I am on my I way and she calls… (Interview # 23).

My further probing during the interviews also revealed that mobile phones are providing the opportunity for people (mobile users) to easily deceive others about their whereabouts when it comes to debt payment. The traders interviewed explained that they themselves and customers do not sometimes or always speak the truth with regard to paying off debts. In particular, retail textile women traders (8 out of 18) in this study point out that although most

customers end up paying their debts as promised, they often do not trust information received from some of the customers about being on their way to pay their debts because they sometimes end up not showing up. However with regard to customers making orders, such information is trusted.

The preceding discussion suggests that price information received via mobile phones is trustworthy however with regard to whereabouts and in some cases of customers being on their way to pay their debts; such information is often not trustworthy. From this empirical finding mobile phones tend to contribute to uncertainty about physical location in urban (market trade) interactions.

6.6 Conclusion

This chapter has analysed the discourses of traders in the four markets with regard to the effects of the use of mobile phone on trading activities as well as the perceived spill-over effects that these effects have in the social lives of the women. The findings show that the use of mobile phones in trade has improved access to business information, increased accessibility and improved relationships between traders and customers. Mobile phones have helped to build trust and led to risk taking, and widened business networks. They have also reduced movement and transport costs, and thereby improved the profit margins of the women traders in this study. The social lives of the women traders have therefore been positively affected by the effect of mobile phone use in micro trade. They have become sole breadwinners and backbone of their families as they cater for their children and family (households), they are able to easily save some of their incomes and without much difficulty make the necessary financial contributions to their religious groups (churches).

The presence of mobile phones has provided the opportunities to access market and price information among the women traders (wholesalers and retailers) interviewed and this has to a large extent impacted positively on their trading activities. The traders in this study have become empowered as they are able to make timely and better decisions that have given them control over their businesses and social lives. They have also been financially empowered as they earn better incomes to the extent of becoming back bones of their families.

The next chapter will discuss the emergent overarching themes from the discourses analysed in chapter five and six.

CHAPTER SEVEN

CONCLUDING DISCUSSION

7.1 Introduction

This research examines the access to and differences in use of mobile phones and their effect on informal micro-trading activities and on the social lives of wholesale and retail women micro-traders in Accra. With data from semi-structured interviews and key informant interviews in four major markets in Accra; namely, Makola, Agbogbloshie, Madina and Kaneshie markets, the two previous chapters examined the findings that emerged from the interviews with these women traders. My aim in this chapter is to discuss the discourses of these traders and revisit the main questions of the study: how market women in Accra gain technological know-how to use their mobile phones in their micro-trading activities; and what they observe as the main effect of mobile phones on their micro-trading activities and social lives.

I begin this chapter with a discussion on the effects of mobile phones on informal micro trading activities among women traders in the selected markets in Accra. I further discuss in this chapter the functional knowledge and the usage pattern of mobile phones among women traders, focusing on the various forms of literacies: basic language literacy, technical literacy and information literacy. In this chapter I also discuss the social effects of mobile phones on informal women micro-traders' lives. I end the chapter by highlighting the contributions of this research and making conclusions regarding mobile telecommunication in informal micro-trading activities in Accra.

7.2 The indispensable role of mobile phone in informal micro-trading

Mobile phones have come to form an integral part of informal micro-trading activities and have significantly transformed the organisation and the operations of these business activities among informal women micro-traders in Accra. The information on price, availability of goods, time of arrival of suppliers and when to travel to the farmlands or outside the country – Ghana is needed by women micro-traders in Accra to purchase their goods. Overå (2008) argues that the better informed a trader is on market information in the chain of distribution, the better the trader is able to make decisions for transacting a successful trade. McMillian (2002) and Boateng (2010) also argue that access to market information is vital to micro-

trade and market efficiency. Women micro- traders in Accra have their trading partners in dispersed locations and are therefore faced with informational challenges and uncertainties as they are hindered by poor or bad road networks, traffic congestion, and unreliable trading networks etc. which make it difficult for them in coordinating their trading activities. For Overå, in the absence of telecommunication, micro-traders travel long distances to purchase goods, communicate and exchange business information based on face-to-face encounters or send oral messages through intermediaries who travel on behalf of the trader. Telecommunications however make it easier to organise activities and to exchange information in spatially dispersed networks (Overå, 2006). Fortunately in contemporary times, information access and exchanges has been enhanced with the emergence of new ICTs – particularly mobile phones. Mobile phones have been noted in numerous studies (Aminuzzaman et al; 2003; Overå, 2006; Molony, 2006; Abraham, 2007; Jagun et al; 2008; Muto & Yamano, 2009) to enable and enhance the exchange of market and price information among micro-traders in spatially dispersed locations leading to a reduction in information asymmetries and uncertainties and making market organisation efficient. From this study finding in the selected markets of Accra, the organisation and operations of wholesale and retail women informal micro-trading activities have been enhanced because women micro-traders have integrated mobile phones into their market activities, which have facilitated the exchange of information and access to their trading networks in dispersed locations. This integration of mobile phones into informal micro-trade and the associated gathering of market and price information have led to: improvement in the coordination of market activities; strengthened market traders and their business networks relationships and enhanced trust building; reduced unnecessary movement and long distance travels as well as reduced transportation costs; and improved incomes earned by market women, enabling them to be better financially endowed to sustain their families.

7.2.1 Enhancement in the coordination of micro- trading activities

In Accra, a considerable cooperation, coordination and exchange of information is needed within the chain of distribution in spatially dispersed locations, in transporting of goods from suppliers (farmers) to the consumer. Women micro traders therefore need to coordinate and exchange information for successful market trading activities. With challenges of information uncertainties, unreliable transport and poor or bad road networks roads etc. the emergence of mobile phones has created opportunities for wholesale and retail women informal micro-traders in the selected markets in Accra to access information for their economic activities.

With mobile phones they are able to easily access market and price information; easily able to make orders and enquiries about the availability of goods (whenever out of stock) and suppliers; and access their trading networks and other trading colleagues that are in spatially dispersed locations. Mobile phones have enabled easy access to information and trading networks and this has led to improvement in the coordination of the women's micro-trading activities. Market activities, via a mobile phone call, can easily be coordinated as wholesale and retail customers can be informed about price changes whenever the need arises. Retail women traders are also able to easily contact their trader colleagues to access prices and make comparison of goods and their prices in different markets, particularly when they go scouting for goods.

From this empirical study, information asymmetries and uncertainties, a significant challenge in informal micro-trading activities in Accra – have thus been reduced as mobile communication enables easier access to women traders and their networks to exchange market and price information. Mobile phones have therefore become relevant in informal economy of Accra with regards to wholesale and retail micro-trading activities and have led to 'incremental benefits' (Boateng, 2010) by enabling women informal micro-traders to have up to date information about their business in terms of prices, availability of goods and suppliers.

The coordination of wholesale micro- trading activities in this study has been improved as mobile phones facilitate face-to-face meetings and enable arrangements among vegetable wholesale women traders to set off to purchase their goods from their suppliers (farmers) in the hinterlands outside Accra or outside Ghana (Burkina Faso, Mali, Niger, and Togo). Mobile phones have thus become indispensable in informal micro trading activities as they have improved the 'micro-coordination' (Ling & Yttri, 1999; 2000) of these women's business activities by enabling successful scheduling among vegetable wholesale women micro-traders, as they contact each other via calls and by making arrangement to set off to purchase their goods. By travelling to purchase their goods outside Ghana, vegetable wholesale micro women traders have extended their micro-trading activities beyond the borders of Ghana. This shows that micro-trading activities go beyond the enclosed space of the market as traders interact with suppliers and their trading networks in dispersed locations and operate without strict legal tenure and regulations, which reflects the informal nature of their economic activities.

Textile wholesale women micro traders also engage in transnational trade as the goods they sell are not only from textile companies located in the country, but from other countries, as they also travel to purchase their textiles from outside Ghana (Togo, Ivory Coast, Lagos, UK etc.). Such travels are also coordinated via mobile phone calls to suppliers outside the country by making arrangements to know when goods are available in order to travel; know of available textile designs and to make orders etc. These travels also reflect the fact that informal micro-trading activities in the selected markets of Accra are not limited to a specific space as interaction with trading networks goes beyond the borders of Ghana. Textile wholesale women micro traders in this study bringing in goods from other countries exemplify the fact that goods sold in markets in Accra are not solely indigenous goods but comprise foreign ones as well. This also shows the interconnections between the formal and informal economy as these women purchased their textiles from textile manufacturing companies within and outside the country, Ghana. This empirical finding again shows that the informal economy of Accra can be conceptualised within the structuralists view of informal economy.

The coordination of the women's informal micro trading activities has also been enhanced as mobile phones have become a monitoring communication technology among vegetable wholesalers (those who do not travel to buy goods) and retailers in the selected markets of Accra. Vegetable wholesale and retail informal women micro traders can monitor their suppliers as they travel to Accra markets with goods, and be informed about the arrival time of the suppliers. Such exchanges of arrival time information enables these market women to get more sleep than the previous times. Previously they had to get to the market early and had to wait for hours before suppliers arrived. Mobile phones have therefore allowed vegetable market traders to assume a flexible supervisory role in market trade, a characterisation of work and employment in the informal economy of Accra.

The access and exchange of information, via mobile phone calls, enables the smooth coordination of market activities among women informal micro traders and their trading networks, which has also led to better and timely decisions as well as more control over businesses. Information about prices, availability of goods and scheduling times enables wholesale and retail women micro traders in the selected markets in Accra to make the necessary decisions about their business activities and the organisation of their homes. These traders have therefore gained more control over the management of their trading transactions, a feature of self-employment opportunities that hinge on no control of their work by others.

Work done on one's own flexible time and convenience also reflects the nature of informal economic activities in Accra.

7.2.1.1 The mobile phone and its comparative advantage to farmers or suppliers

The enhanced coordination of activities and making of better decisions among these women traders studied have also extended to suppliers, specifically farmers. Mobile phones as reported particularly among the wholesale women have improved communication between farmers as they are able to communicate with each other in different locations to access price information. For this reason farmers can now make better decisions about which prices to sell their goods as they can easily access price information from their fellow suppliers (farmers), giving them more bargaining power over women informal micro-trading travellers in the wholesale vegetable markets in Accra. Previously these women traders had higher bargaining power over their suppliers (farmers), but mobile phones have resulted in a situation of farmers being informed about market prices. Thus mobile phones have compressed space and allowed communication that would not have been able to occur.

7.2.2 The mobile phone role in relationships among women micro-traders and their networks in Accra

Studies (Samuel et al. 2005; Esselaar et al. 2007; Donner, 2007; Frempong, 2009; Aker & Mbiti, 2010; Boateng, 2010 & 2011) have shown that the use of mobile phones in micro trading activities could generate 'relational benefits' (Boateng, 2010, 2011) as mobile phones enable the improvement and development of trader and customer relationships or their trading networks. From this study mobile phones integration in women micro trading activities led to relational benefits as mobile phones made wholesale and retail women micro-traders in the study available to their trading (business) networks and strengthened their relationships.

Mobile phones have therefore fostered constant interaction among wholesale and retail market women and their trading networks, minimising the constraints of time, space and distance and resulting in the development of being connected no matter where one is and this has been dubbed as 'connected presence' (Licoppe, 2004) as they exchange information about prices, availability of goods etc. For this reason mobile phones have allowed wholesale and retail women informal micro-traders to be involved in their business transactions without the need for face-to- face encounters. Therefore mobile phones integration into women

informal micro-trading activities in the selected markets in Accra has become substitute for regular or deferred face-to-face encounters and communications.

Mobile phones have not only become relevant in informal micro trading activities in the selected markets in Accra as they facilitate the development and maintenance of women micro-traders and their trading and social network relationships, highlighting the significant role of mobile phones in strengthening and shaping of social networks. They also serve instrumental purposes as wholesale market women are able to connect with their families when away on their journeys to update them about delays in returning home and also exchange any relevant information when necessary. Mobile phones have also allowed children, husbands, family and friends to be available to women micro traders and vice-versa whenever the need arises. Mobile phones thus serve as a link or connection for mothers and children (and other relatives) as their children (both home or in boarding houses) and other relatives are able to contact them when away on their businesses transactions, thus sustaining primary relationships over distance. This linkage role of mobile phones exemplifies mobile phones to be referred to as 'umbilical cord' (Palen et al. 2000).

Mobile phones also afford these women textile traders in Accra, the opportunity to check on the well-being of customers who have not been seen in the market for a while. This reflects the close customer-friend relationship developed among market women in Accra and their customers. In doing such checks on the well-being of customers, market women are able to inform these customers about the arrival of new goods. In this way market women in this study advertise their goods to their customers through the use of mobile phones. Mobile phones thus serve as an advertising technology for women informal micro-traders in Accra.

7.2.3 Beyond the perceived effect role of mobile phones in relationships: trust and customer base

Arguably 'the more we connect with other people, the more we trust them…' (Putnam cited in Sztompka, 1999:15). It is also argued that repeated interactions or encounters and reputations established over time among individuals result in the development of trust (Dasgupta, 2000). Mobile phones have fostered frequent interaction among suppliers, wholesale and retail women in informal micro-trade in this study, as they transact their market activities, and this has led to the building of trust among these women traders and their trading networks. It is argued that trust thus plays a vital role in facilitating information exchange in business transactions (Sekhon et al. 2014) and it is also noted as a valuable and a

crucial component of social capital (Sztompka, 1999; O'Neil, 2002). Trust, which is a lubricant for cooperation (Akerlof, 1970; Dasgupta, 1988; Uslaner, 2002) has made market and price information exchange among these women informal micro traders and their trading networks possible. This trust built among these traders and their trading networks is based on established long term face-to-face interactions (though in not in all situations as goods are sold on credit to first time customers) and good reputations developed over time as they coordinate and cooperate in the distribution and sales of goods. Such trust has led market women in the study to have confidence in their customers therefore take the risk to sell goods on credit to customers even to first time customers (mainly retailers). The selling of goods on credit, based on trust, is facilitated by the use of mobile phones to share contact numbers. This is because they have confidence in their customers' contact numbers and trust that they will behave in an expected matter, that is to pay off their debts. This behavioural pattern of these women reflects the writings of Serchan et al. (2013) that trust is a measure of confidence that an entity will behave in an expected manner.

For Sztompka (1999:25) "in situations [where] we have to act in spite of uncertainty and risk, trust becomes the crucial strategy for dealing with [an] uncertain and uncontrollable future". Market women in this study based on an act of trust, willingly give out their goods on credit to customers (mainly retail customers) with whom they often had no prior stable relationships. This seems different from the situation among micro-traders in Tanzania. Molony's (2006) study among Tanzania micro-traders shows that trust among these traders and their trading networks was based on long existing relationships. In this study in the selected markets in Accra, the women micro-traders appeared to trust (even first-time) customers enough to believe that the contact or phone numbers given them were viable, and that these customers would honour their commitments. The integration of mobile phones into market trade has therefore offered women micro traders in this study something new, what Boateng (2010) referred to as a 'transformational effect', which is generated when mobile phones are used in micro-trading activities. Mobile phones have added something new to the ways of taking risks in selling goods on credit in micro-trading activities, as they have afforded new opportunities to first time customers (mainly retail customers) based on trust gained from wholesale women informal micro traders to purchase goods on credits.

In market transactions in Accra, legal sanctions for contracts is weak or non- existent, therefore for women informal micro traders, trust is essential in selling goods on credit to customers. Sztompka (1999) argues that with weak legal sanctions, trust becomes

increasingly salient in decision making and actions among micro traders and their trading networks in the distribution chain. For Overå (2008) market activities are based on micro-level trust as personal encounters play a role in gluing and maintaining relationships. In Accra market trade, formal or written contracts are not the basis on which transactions are undertaken, as these women have low educational and literacy levels, which limits their involvement in writing formal contracts. Thus no signed formal or written contracts are involved as goods are sold on credit to customers by market women in Accra. Such transactions take place through verbal communication and often in the presence of fellow traders. Accra informal micro-trading business transactions are therefore mainly based on trust with respect to selling of goods on credit in markets in Accra.

The selling of goods on credit to customers is not a difficult task among women informal micro traders studied. Mobile phones offered market traders the ability to easily contact customers and thus to track their debts. The wholesale market women can easily track their debts because mobile phones enable these traders to have immediate interaction or what has been referred to as 'constant touch' (Agar 2004) with customers who failed to meet their debt commitments at any given time. Women traders in this study however have the confidence and assurance that their customers are God fearing and trustworthy when it comes to payment of their debts. Therefore in situations where a trader loses her SIM card and therefore losses all her contacts numbers; or a customer is not able to be contacted owing to the loss or changing of a SIM card, these customers tend to show up in the markets no matter how long it takes to pay their debts. This reflects the religious beliefs of wholesale and retail women micro-traders in this study and its extension in their actions towards their customers. As argued people tend to trust others who are similar to them (Earle & Cvetkovich, 1995 cited in Sztompka, 1999:80) as trust among these women and their customers are inferred from beliefs.

The networks of wholesale and retail informal women micro traders studied in the selected markets in Accra have increased, leading to expansion in their businesses. This is because mobile phones offered new ties (new customers) to the micro-traders in this study, as they took risks and sold goods on credit to customers (and even first time customers), leading to an increase in the customer base of these traders. Samuel et al. (2005), Kyem and Le Marie (2006), Overå (2006), Jagun et al. (2008), Munyua & Mureithi (2008) and Boateng (2010) also note a similar effect of mobile phones on micro-trading activities in their studies. The expansion and widening of women informal micro-trading businesses noted in this study

shows that mobile phones enable the building of trust with their trading networks, or what is called micro-level trust (Overå, 2006). This therefore leads to the acquisition of new trading networks (mainly customers) for wholesale and retail informal micro women traders in Accra.

7.2.4 The mobile phone and comparative advantage in movements, journeys and costs

The integration of mobile phones into informal micro-trading activities among women traders in this study has facilitated transactions that might have taken place at a higher cost or which might not have been able to take place at all. The frequency of interactions based on face-to-face encounters between suppliers (farmers) and vegetable wholesale women micro-traders in transacting their activities – owing to frequent movements and travels – have been reduced. Overå (2008) argues that most informal micro-traders in Accra spend enormous amounts of money and time travelling to farmlands (rural areas) in congested traffic to inquire about whether goods are ready to be purchased, to check on prices, to ask for credit, to collect debts and to make orders. It is also estimated that twenty-three per cent of all travellers on Ghanaian roads travel to exchange information (Segbefia, 2000).

In Accra, retail women micro traders often move from one market to another when scouting for goods or to check and compare prices before purchasing their goods. Vegetable wholesale women micro-traders in Accra also often travel outside Accra to farmlands in the Northern, Eastern, Ashanti and Central parts of Ghana or outside Ghana (Burkina Faso, Niger and Togo) to purchase their goods. Travelling to these regions (i.e. Northern, Eastern, Ashanti and Central parts) of Ghana or outside Ghana is not a pleasant experience; it is tedious and risky due to poor and unreliable road networks, passenger overloading, congestion and the high charges paid for goods brought through customs. These factors make such journeys and transactions very costly. With just a mobile phone call, these women traders studied can now easily exchange information with their trading networks in the different markets and the hinterlands outside Accra and Ghana. For instance they can easily find out whether their suppliers or farmers have goods available before undertaking any movement and journeys to purchase their goods. Mobile phones have therefore reduced unnecessary movements and costly journeys to different markets and farmlands to access information and purchase goods. Mobile phones in informal micro-trading among women traders in this study have led to what is dubbed 'operational benefits' (Boateng, 2010 & 2011) by reducing transactional and

transportation costs, owing to the minimisation of unnecessary movements and unfruitful journeys.

The availability of mobile phones means that informal retail micro women traders in Accra are able to easily contact wholesale women traders to exchange information about the arrival of new goods, prices and to make orders. Retail micro women traders (as customers) serve as a benchmark for better decision making among vegetable wholesale women traders, by virtue of being able to make regular orders, via mobile phones. This information guides them and allows them to budget for the quantity of goods needed when they go to the farmlands. This decision making is crucial to these vegetable wholesale women in the purchase of their goods as it prevents or avoids the spoilage of their goods. This is a form of transactional cost, which has been eliminated owing to the presence of mobile phones in informal micro-trading activities – a reflection of the indispensability role of mobile phones to informal micro-trading activities in Accra.

7.2.5 The mobile phone and profit margins among women micro-traders

Transactional costs are intrinsically linked to transportation costs, and these two factors determine profit margins in trading activities. None of the women traders interviewed in this study were willing to reveal the amount of profit they earned,[202] but the majority firmly acknowledged that with the integration of mobile phones into their businesses, their profit margins are much better compared to earlier periods when they had to: make costly journeys or efforts to find out information about prices or the availability of goods; make journeys that ended up being unfruitful; or when they were unable to contact customers (retailers) in the event of a change in price of stock. In the case of vegetable traders this often resulted in losses associated with perished goods. The required airtime is costly, however, they argued that such calls are cheap compared to earlier costs associated with journeys, stock shortfalls and perished goods. They also argued that with airtime or credits being available for as low as one Ghana cedis (0.3USD) they can easily keep in touch with their trading networks.

[202]This could be due to fear of paying higher levies (tolls) as their profit margins are not taking into consideration when levies are collected.

7.3 Women micro-traders' socio-economic status and the wider field of informal micro-trading in Accra

7.3.1 *Beyond the effect of mobile phones on women traders' income and the domain of informal micro-trading in Accra*

The majority of women traders interviewed in this study report that with the introduction of mobile phones into informal micro-trading activities both their income and socio-economic status of have improved. These women micro traders in this study have a relatively high social standing in the informal trading hierarchy, because they are wholesalers and retailers.[203] As such they have what has been termed a 'self- image' (Peil, 1977) of status associated with market trade. It has been argued that women traders are recognised as business women of high social standing in Accra, owing to their involvement in transnational trade and incomes that are better than many who are employed in the civil service and other parts of the formal economy (Dunne & King, 2003; Darkwah, 2007; Overå, 2007). Many of the married women reported that an improved income has coincided with them to become the sole breadwinners in their households. Some traders noted that their husbands did not have any permanent job. In this situation some of the women referred to their husbands as 'the living dead' a term which means the absence of a man's financial contribution to the household. Those who are single or divorced, are thus also able to cater for their needs and those of their children owing to better incomes earned. This suggests that most traders' incomes are sufficient to cater for their families and to sustain a comfortable standard of living. The ripple effect of a technology[204] (Aminuzzaman et al; 2003), in this situation mobile phones, is reflected in the lives of women traders in this study. This is because via market trade, mobile phones have allowed many of these women to become sole breadwinners and in some situations becoming heads of households.[205] Therefore in terms of income earning, informal women micro-traders in this study are of a high social standing in the informal economy of Accra irrespective of their low educational levels.

Portes & Castells' (1989) and Sassen (1991) argument that women in the informal economy tend to be marginalised because they earn low income is not supported by the empirical

[203]The trading hierarchy of Accra comprises wholesalers, retailers, petty traders and hawkers.

[204]A multi strand impact; that is impact that spread across many aspects of lives.

[205]Some Accra women traders are heads of households because their husbands have lost their jobs or earn incomes that is not sufficient to cater for the needs for the family. These women traders therefore are the financial providers for their households. These women becoming financial backbone of their families explain the gradual increasing of female headed households in Accra.

findings of this study. With many women micro traders in this study in Accra becoming financially endowed through the earning of better incomes, it would seem that the informal micro-trading economy in Accra does not consist solely of low income earners. Based on what they claim about their incomes, the women traders in this study could therefore be equated to some categories of people employed in the formal economy of Accra. This therefore makes the line between the formal and informal economy, with regard to income earned, somewhat blurred within the context of Accra. The informal economy is often associated with low incomes and a struggle for survival. The women micro-traders in this study, by virtue of being self –employed, have flexibility in operating their business operations and experience very little government regulation. They are thus considered informal workers, even though they are earning good incomes and having relatively comfortable lives. They are located at the apex of the informal trading hierarchy and described as business women of high social standing, as they earn good incomes compared to some people working in the formal economy of Accra. With the integration of mobile phones into their activities, they claim that their incomes have improved - with many becoming sole breadwinners - and most do not seem to be struggling for survival. These women cannot be conceptualised as 'poor' despite working in the informal economy. This then complicates the distinction between the formal and informal economy of Accra. Classifying these women as micro-traders in the informal economy, conceptualized in terms of self-employment, flexibility in business operations and minimal government regulation makes sense, but adding low income as a criterion makes the conceptualisation more 'hazy'. With better incomes, most of the traders in this study are now better endowed and have savings and investments with banks and other financial institutions in the formal economy of Accra. This highlights the interconnections between the formal economy and informal economy in Accra.

Better incomes mean that these women traders are more able to comfortably meet the necessary financial obligations of their religious groups.[206] The fulfilling of such financial obligations irrespective of education level reflects these women traders social standing in the informal economy. Being financially empowered reflects the power dynamics between these women and their other trading colleagues in the trading hierarchy (petty traders and hawkers) as well as their husbands. For the women interviewed in this study being financially

[206]They are able to pay their tithes, offerings and meet other financial obligation as members of their groups (specifically churches). In Ghana, such financial contributions are obligatory in churches, and being able to fulfill such obligations irrespective of your educational level gives you prestige and recognition as a member and one is able to enjoy many benefits and opportunities from the church.

empowered means they are able to make decisions about their businesses and lives. Being able to make choices as a woman in a predominantly patriarchal economy like Ghana reflects the position one has in the economy. Also for this reason these women therefore have relatively high business and social standing, irrespective of their educational levels. Market trade in urban areas enables most of the women to generate income or earn adequate income to take up responsibilities of their families, to the extent of becoming sole breadwinners of their households. This shows that their incomes are not at the survival level which also tend to suggest that the market place, though 'feminised', is not an arena of 'feminisation of survival'. This again suggests the strong presence (economically) of these urban market women in the informal economy. Their incomes earned tend to guarantee them a better standard of living suggesting the vital role of micro-trade in the lives of these urban women traders in this study.

The integration of mobile phones into women informal micro-trading activities among these women in Accra therefore has made micro-trading a much more lucrative job opportunity. It is likely therefore that more people will be attracted to working in the informal economy of Ghana. This is noted in the findings of Dunne and King (2003) that many people in the informal micro trading sector – and specifically market trade (mainly in wholesale and retail businesses) – in Ghana, would not seek employment opportunities in the formal economy as they find informal employment more lucrative. This could be one of the reasons why the informal economy of Accra is expanding, as more and more people establish their own MSEs. And this is exemplified by the growing number of informal sole proprietor MSEs involved in the mobile phone trade.

7.4 Literacies and dimensions of digital inequalities in the use of mobile phones among micro women traders in Accra.

Mobile phones have been noted as user friendly and require little or no special training in employing their basic functions (Esselaar et al., 2007; Hinson, 2011; James, 2011). Nevertheless the use of the myriad opportunities and services of the mobile phone one owns depends on various forms of literacies, which include basic language literacies, technical literacies and information literacies. A lack of various forms of literacies can mean that the mobile user is unable to enjoy all the benefits that a mobile phone may offer. Inequality, is therefore created as there would be differences in the quality of use among those mobile phone users who have such literacies and those who do not. Mossberger et al. (2003) and

Warschauer (2003) argue that social inequality exists when there are differences in the quality of use of mobile phones and associated ICTs. Hargittai & Walejko (2008) also argue that assessing the myriad opportunities of mobile phones requires different levels of technological know-how or literacies, and the users of mobile phones with higher levels of literacy are the ones expected to benefit more from the opportunities offered by mobile phones. They further argue that different levels of literacies result in participation divide (Hargittai & Walejko, 2008). It appears there exist a social divide – or a participation gap – in Accra, and this is reflected in digital inequalities among the women informal micro-traders in this study, as the majority of them are not able to use their mobile phones beyond the basic function of calling, due to the lack of aforementioned various forms of literacies.

7.4.1 Basic Language literacy as a dimension of digital inequality

The purchasing of (recent) mobile phones means one has access to a wide variety of services and applications, such as internet, camera, email, online banking, Facebooking, WhatsApp, Mxit[207], etc. Thus, while mobile phones provide a wide range of services beyond voice communication, most of the women micro traders in this study use only the basic function of their mobile phones: that is making and receiving calls. The majority of these traders were not able to explore their mobile phones beyond calling – for example, very few were able to send texts.

Texting is time consuming and involves basic language literacy (writing and reading) as well as creativity because of the limited text characters available for a message. In Accra, basic language literacy to a large extent is received through formal education. Even though the wholesale and retail women informal micro-traders in this study have an understanding of numbers and few English words to enable them engage in their business activities, many of them have low literacy level in the country's official language[208] and in their local languages, due to their low educational levels. Most of these traders have basic education and less than one third of them have secondary education or higher.

As a result of their low educational levels, these women informal micro-traders lack basic language literacy, which hinders their use of text messaging. Nonetheless those with

[207]The Mxit service has not been extended to the economy of Ghana yet. Mxit (pronounced "mix it") is a free instant messaging application developed by Mxit (Pty) Ltd in South Africa that runs on over 8000 devices, including feature phones, Android, iPhone, ipad and tablets etc.
[208]English is the official language in Ghana. It is also the medium of instruction in schools.

secondary or higher education tended to text more[209] and this would seem to reflect basic language literacy. These women with secondary education or higher are therefore able to navigate their mobile phone interfaces (keypads), as they write and also read while sending or receiving (chats) text messages. This same category of women traders with secondary school or higher who are able to text, due to having basic language literacy, also learnt how to make calls and store their mobile contacts on their own through the readings of their mobile phone manuals.

The lack of basic language literacy serves as a barrier for those who have just basic education to explore their mobile phones beyond calling. The differences in the levels of basic language literacy, which is inferred from the level of formal education, seem to be one aspect of digital inequality among the women micro traders in this study.

The majority of women micro-traders in this study, who are unable to send SMS, due to their low educational levels, have no knowledge of the new forms of abbreviated language used for SMS. This tends to create inequalities among these women and their trading colleagues who are able to use text messaging. Mobile phone users who use text messaging are thus familiar with Net speak (Crystal, 2006) shorthand. Net speak is a form of communication which has characteristics belonging to both speech and writing. This is a new development with respect to speech and writing on the Internet due to the emergence of computers, mobile phones and associated information and communication technologies (Crystal, 2006). Women micro-traders in the selected markets for the study in Accra who lack basic language literacy are left out of this new communication form associated with texting.

7.4.2 Technical literacy as a dimension of digital inequality

The use of a mobile phone involves various forms of literacies of which one is technical know-how or technical literacy. Technical literacy is therefore an important aspect of the quality of use of a mobile phone. Many of the women micro-traders in this study lacked technical literacy as they were not able to exploit the mobile services and features of their mobile phones owned. This is because of the differences in the model of mobile handsets and the mobile phone services that they own. Smartphones or 3G mobiles[210] were owned by few women micro-traders in this study; most of the women owned second generation (2G) mobile

[209]These women micro- traders also access the internet and involve in Facebooking and WhatsApp, which is another form of texting. Also apart from their education levels being higher, they are younger and most of them have smartphones.

[210]As noted in chapter five some of the Accra traders own 3G mobile phones (see Appendix 3 for samples of mobile phones owned).

phones. This pattern of ownership of mobile services was noted to be based on scale of activity and age, as it tended to be young retail traders who owned smartphones in the markets selected for this study.

Differences in models of mobile handsets owned seems to be associated with digital inequality as those with latest models would have more mobile services to explore and benefit from. Even though some of the women micro traders with secondary or higher education owned smartphones and used texting, there were others in this same category that lacked technical literacy and hence tended not to use their mobile phones beyond the calling function. This is a reflection of lack of technical literacy even though technical inequality (such as differences in mobile handsets owned) existed among the women traders in the study.

With 2G being the predominant mobile services owned, many of these women micro-traders find the interface of such mobile phones to be complicated to use beyond calling function, such as text messaging. Reid and Reid (2007) argue that sending of SMS message on a typical second-generation (2G) mobile phone takes time and significant effort—the keypad is cramped and awkward to use, often requiring several key taps to enter a single character, the handset display is small and poorly lit, and though editable, messages are limited to 160 simple text characters. Most of the traders interviewed who own second generation mobile phones lack the technical mastery– or technical literacy– to use their mobile phones to send text messages, as they find such mobile phone interface complicated. They therefore struggle to use and explore the myriad opportunities that their mobile phones have to offer. This could be because they encountered mobile phones and associated digital technologies later in life,– a reflection of their status as 'digital immigrants' (Prensky, 2001) or 'digital migrants' (Zubieta, 2010). It appears that most of these (adult) traders who lack technical literacy are first time users of digital technologies, and therefore do not have broader knowledge and understanding to navigate their mobile phone interfaces and to explore the services their mobile phones have to offer.

To the extent that these women micro traders are able to enjoy the basic functions of their mobile phones, this is often due to the support they receive from others – and particularly their children. The children of these women traders are able to teach their mothers how to make calls and to send text messages. While these women are taught by their children how to send texts, they find it difficult and complicated because of their lacking of technical literacy.

They find it easier to make and receive calls because they are able to identify and differentiate between the green and red icons on the keypad of their complicated 2G mobile phone interfaces; they do this based on the instructions they have received from their children. It appears to a large extent that these children of women traders, in the selected markets for the study, are more familiar with mobile phones and have more technical literacy.

The fact that many of the women traders depend on the technical support of their children shows that age or intergenerational differences appear to be associated with acquiring the different levels of literacies required to use one's mobile phone. It is argued that young people who grow up in the era of mobile phones and associated ICTs are said to be 'digital natives' because they are familiar with these technologies and, seemingly, are able to effortlessly adopt and adapt to changes in the digital landscape (Prensky, 2001). These children of women traders are born in the era of digital technologies and grew up with them – hence their familiarity with mobile phones. It is worth noting that the majority of the women micro-traders were at least forty years of age when interviewed, which indicates that they were not born in the era of digital technologies (as noted that in Ghana, mobile phones and associated ICTs were introduced in the 1990s with majority acquiring mobile phones late 2003 and early 2004)[211] and are therefore now getting the knowledge and adapting to these new technologies. Age or intergenerational difference is therefore associated with the pattern of use of mobile services and this reflects digital inequality.

Digital inequality in the form of technical literacy associated with intergenerational differences was also evident in the use of another basic function of mobile phones: the storing of contact numbers onto one's mobile phone. Majority of women micro-traders in this study lack the technical literacy required to navigate their mobile phone interfaces and store their contact numbers on their mobile phones; these numbers are stored into their contacts or phonebooks by their children (or grandchildren)[212], which is again a reflection of intergenerational (age) differences among these traders and their children.

The rendering of technical support by children to these micro-traders reflects a lack of autonomy (control) in the use of their mobile phones. Digital inequality therefore appears to exist among these traders, as they lack both the basic language and technical literacies required to have autonomy or control over the use of their mobile phones. Lacking the

[211]Frempong et al. (2005).
[212]In some cases friends who have the technological know-how to store contact numbers assist them.

autonomy to use one's mobile phones due to gaining of social support from others reflects digital inequalities as argued by DiMaggio and Hargittai (2001).

7.4.3 Information literacy as a dimension of digital inequality

Information literacy: that is the ability to search, select and process information; (Van Dijk & Hacker, 2003) by entering the digital domain of digital technologies is associated with having some level of technical literacy and basic language literacy. With information literacy, mobile phone users with smartphones are able make use of various digital domain, typically hosted on the Internet, and access more advanced services such as online banking and money transfer services. These advanced mobile services also involve texting which means one should have basic language literacy. However, there was no evidence of mobile banking or the use of money transfer services among women micro traders in this study, even though a few of them owned smartphones. Such similar finding has been noted in Boateng's (2010) and Frempong's (2012) study of micro-traders in Ghana – they found that these micro-traders do not use mobile services that require information literacy – such as mobile banking and mobile transfers.

In assessing digital inequalities, DiMaggio & Hargittai (2001) argue that differences in technical means, of the need for social support, and any lacking of autonomy in use and expertise with respect to a technology should be considered. From the preceding discussion, digital inequality with respect to the use of mobile phones exists among wholesale and retail women micro traders in the selected markets. This is because making use of the opportunities offered by mobile phones requires: technical means (the model of mobile handsets owned) and some level of formal education, which forms the basis of various forms of literacies: basic language literacy; technical literacy; and information literacy.

Educational differences and intergenerational differences associated with the forms of literacies mentioned tend to create a 'social divide' (Norris, 2001) among women micro-traders as it is those with secondary or higher education and those that are younger who tend to go beyond the voice communication services provided by mobile phones owned. Digital inequality also exist among women micro traders in this study because while many of them enjoy the basic functions of their mobile phones (calling and to some extent texting), other

mobile phone users[213] in Accra enjoy additional services such as Internet web browsing, games, online banking services etc.

7.5 Impact and relevance of study

This study has contributed to knowledge of the dimensions of digital inequality, which is important for understanding the use of mobile phones among informal women micro-traders in Accra and the effect of mobile phones on their lives and businesses. The study has gone beyond assessing the perceived effects of mobile phone use in businesses to explore the spill-over effect of mobile phones on the lives of women traders. It has also contributed towards the building of grounded empirical knowledge and theory across the fields of sociology, sociology of work and ICTs for development (ICT4D). The study has also contributed to knowledge of women in the informal economy and of issues associated with economic development and, more specifically, patterns of mobile phone use among semi-literate populations. A contribution has also been made to research on the effects of communication technologies on trust and social networks.

7.6 Conclusion

As an industrial commodity produced by the formal economy, mobile phones have unquestionably become an indispensable means of communication among women working as micro-traders in informal wholesale and retail markets in Accra. Mobile phones offer a platform for these women to exchange information regarding their micro-trading and social activities; as they use the calling and to some extent the texting features of their mobile phones. Mobile phones have benefited informal wholesale and retail women micro traders in a number of ways: by facilitating the gathering of market information; by enhancing the coordination of micro-trading activities; by improving and strengthening relationships within trading networks; by enhancing trust building; and by reducing transactional and transportation cost, and thereby facilitating better incomes. Mobile phones, as commodities of the formal economy; are playing a significant role in informal micro-trading activities in Accra, and this highlights the interconnections between the formal and informal economy of Accra.

[213]Particularly the youth (Amoah-Darkwah, 2014).

Women traders in the informal wholesale and retail trade have found mobile phones very useful in their trading activities, despite having limited technical know-how to master some of the features of their mobile phones, notably texting. They are also not able to explore the myriad opportunities their mobile phones have to offer. Their limited knowledge stems from a lack of various forms of literacies: lack of technical literacy; basic language literacy; and information literacy. These are associated with their educational levels, technical means (mobile handsets models), intergenerational or age differences and dependence on support from their children when using their mobile phones. Digital inequality therefore seems to exist among these women micro traders in Accra due to the aforementioned lack of literacies that hinder their use of mobile phones beyond the voice function.

Micro-trading activities tend to be conceptualised as relatively informal based on their structure: they tend to involve self- employment; their business activities operate in a flexible manner; there is very little government regulation; and incomes tend to vary. In chapter two I conceptualised the informal economy as comprising any income-generating activity in the form of self-employment[214], that is flexible in terms of operations and that is characterised by a relative lack of state regulation and control. These characteristics of informal activities are reflected in the domain of informal micro-trading, where the women interviewed are self-employed and work at their own flexible pace and convenience. Their work is also not limited to specific physical spaces, and trust serves as the basis of contractual agreement on the selling of goods and the extension of credit. These features thus reflect the informal nature of micro–trading activities of Accra.

The integration of mobile phones into informal micro-trading activities in Accra has significantly affected the socio-economic status of women in wholesale and retail trade. Mobile phones have provided these women micro-traders with a new level of socio-economic status in the informal economy, as they earn much better incomes and are better able to cater for their families and households – to the extent of becoming sole breadwinners and heads of households. This suggests that these women are relatively better off in social standing than many workers in the formal economy of Accra. Given this empirical finding, the line between the formal and informal economy of Accra becomes a bit complicated –or "hazy" – with respect to incomes. Within this informal domain of work – micro-trading – mobile phones have therefore introduced a degree of formality, as they enable wholesale and retail women to

[214]Self-employment here refers to either working alone or in partnership with others.

get better market information and to better organise their micro-trading activities. These women micro-traders also take on better supervisory roles, as they monitor suppliers on their journeys to Accra. But mobile phones also provide more bargaining power to suppliers relative to these women micro-traders (a kind of employer-employee relationship), as the suppliers are able to determine prices at which to sell their goods. These patterns suggest that mobile phones have caused informal micro-trading in Accra to take on some of the characteristics of economic activities in the formal economy.

In a nutshell, mobile phones have significantly affected informal micro-trading activities in Accra and such effects have positively extended to the socio-economic status of wholesale and retail women micro-traders. These urban women traders have become financially empowered and therefore are able to control and make decisions and choices of their own though working in the informal economy. This reflects a level of socio-economic status in their households and the informal economy of Accra. However, despite this social standing with respect to business in the informal economy of Accra, their predominantly low educational levels have tended to create digital inequality among them and other mobile users in Accra (such as their children or youth). While mobile phone usage among informal women micro traders is limited by a lack of various forms of literacy, it would seem that mobile phones have introduced a degree of formality into the domain of informal micro-trading in Accra. These empirical findings in the domain of informal micro-trading show that wholesale and retail women micro traders cannot be situated on one side of a clear cut distinction between a formal and informal economy in Accra.

REFERENCES

Abdallah, M. 2007. Accra, Ghana. The Bronx Journal. [online] Available: www.thebronxjournal.com/accra-ghana/ (2014, March 8).

Abraham, R. 2007. "Mobile Phones and Economic Development: Evidence from the Fishing Industry in India." *Information Technologies and International Development*, 4(1): 5–17.

Accra Metropolitan Assembly (AMA), 2006. Know more about the AMA. Historical background. [online] Available: http://ama.ghanadistricts.gov.gh/?arrow=atd&_=3&sa=2995 (2013, June 8).

Accraexpat.com, 2014. How To with mobile communication: mobile communications. A big role in everyday life [online] Available: http://www.accraexpat.com/help/howto.php?read=34 (2014, June 14).

Adam, L. & Wood, F. 1999. "An Investigation of the Impact of Information and Communication Technologies in Sub-Saharan Africa", *Journal of Information Science* 25(4): 307-318.

Addy-Nayo, C. (n.d) 3G Mobile Policy: The Case of Ghana. Telecommunication Case Studies under the New Initiatives Programme of the Office of the Secretary General of International Telecommunication Union.

Adepoju, P. 2014. Fibre cuts on the rise in Ghana's Western Region-Airtel. Home to African Tech (Human ipo) [online] Available: http://www.humanipo.com/news/43479/fibre-cuts-on-the-rise-in-ghanas-western-region-airtel/ (2014, June 14).

Adika, G. S. K. 2012. "English in Ghana, Growth, Tensions and Trends". *International Journal of Language, Translation and Intercultural Communication,* (1):151-166.

Adu-Amankwah, K. 2007. "May Day Address" Speech Delivered by Kwasi Adu-Amankwah, Secretary General of Ghana Trades Union Congress, Independence Square.

Adu-Amankwah, K. 1999. Trade Unions in the Informal Sector. In Trade Unions in the Informal Sector: Finding their bearings. Nine country papers. Labour Education 1999/3. No.116, ILO.

Agar, J. 2004. *Constant Touch. A Global History of the Mobile Phone*. Allen & Unwin Pty Ltd.

Aker, J. C. 2008. "Does digital divide or provide? The impact of cell phones on grain markets in Niger, "*Bread Working Papers,* 177.

Aker, J. C. & Mbiti I. M. 2010. "Mobile Phones and Economic Development in Africa". *Journal of Economic Perspectives,* 24(3): 207–232.

Akerloff, G. A. 1970. "The market for "Lemons": Qualitative Uncertainty and the Market Mechanism". *Quarterly Journal of Economics,* 84, 488-500.

Alderman, H., Canagarajah, S. & Younger, S. 1995. A Comparison of Ghanaian Civil Servants Earning Before and After Retrenchment. *Journal of African Economies* 4(2):259-288.

Amin, N. 2002. The Informal Sector in Asia from Decent Work Perspective, Employment Paper 2002/4, Geneva, ILO.

Aminuzzaman, S., Baldersheim, H., & Jamil, I. 2003. "Talking back: Empowerment and Mobile Phones in Rural Bangladesh: A study of the village pay phone of Grameen bank," Contemporary South *Asia* (12):327-348.

Amoah-Darkwa, E. 2014. Arise Ghana Youth Series. Episode 1. Ghanaian Youth and the Internet. Modern Ghana Featured Article. [online] Available: http://www.modernghana.com/news/535502/50/arise-ghana-youth-series-episode-1.html (2014, August 1).

Amu, J. N. 2005. *The Role of Women in Ghana's Economy*. Friedrich Ebert Stifung, Ghana. Woeli Publishing Service.

Anderson, R. 2007. Thematic Content Analysis. Description Presentation of Qualitative data Available:
http://www.wellknowingconsulting.org/publications/pdfs/ThematicContentAnalysis.pdf.

Aoyama, Y. 2003. "Sociospatial Dimensions of Technology Adoption: Recent m-commerce and e-commerce developments". *Environment and Planning A,* 35 (7): 1201–21.

Ardayfio-Schandorf, E., Yankson, P. W. K., & Bertrand, M. 2012. *The Mobile City of Accra Urban Families, Housing and Residential Practices*. CODESRIA Book Series.

Arthur, P. 2007. "Development Institutions and Small Scale Enterprises in Ghana". *Journal of Contemporary Africa Studies,* 25(3): 417-437.

Aryeetey, E., Hettige, H. Nissanke, M., & Steel, W. 1966. 'Financial Market Fragmentation and Reforms in Sub-Saharan Africa'. Discussion Paper 356. Washington, DC: World Bank.

Asante, R. 2011. *Mobile Phone Usage Patterns: The Case of Market Women in Ghana*. Lambert Academic Publishing.

Asiedu , A. B., & Agyei-Mensah, S. 2008. "Traders on the Run: Activities of Street Vendors in the Accra Metropolitan Area, Ghana". *Norsk Geografisk Tidsskrift-Norwegian Journal of Geography,* 62(3):191-202.

Atuahene, F. & Owusu- Ansah, A. 2013. A Descriptive Assessment of Higher Education Access, Participation, Equity & Disparity in Ghana. Sage.

Awo, M. 2012. *Marketing and Market Queens: A Study of Tomato Farmers in the Upper East Region of Ghana*. Lit Verlag.

Awojobi, O.N., Ayakpat, J. & Adisa, O.D. 2014. "Rebased Nigerian Cross Domestic Product: The Role of the Informal Sector in the Development of the Nigerian Economy". *International Journal of Education & Research,* 2(7):301-316.

Awumbila, M., Quartey, P., Manuah, T., Bosiako, T. A., Tagoe, A. 2012. Changing Mobile Patterns and Livelihood Dynamics in Africa: The Case of Transnational Trader. Final report for the MacArthur Project on: "Africa Perspective on Human Mobility". Centre for Migration Studies. University of Ghana, Legon.

Ayensu, E. A. 2003. Communication and Culture in Ghana: Technology's Influence and Progress in Digital Age. A thesis submitted to the Graduate School of Faculty of Arts and Sciences of Georgetown University, Washington, D.C. Cambridge.

Baah-Boateng, W. 2004. Employment Policies for Sustainable Development. The Experience of Ghana. A Paper Presented at a National Workshop on an Employment Strategy Organized By Government Of Ghana/ UNDP/ILO, ACCRA. May, 7.

Baden, S., Green, C., Otoo-Oyortey, N., & Peasgood., T. 1994. Background Paper on Gender Issues in Ghana. Report Prepared for West and North African Department, Department for Overseas (DFID) UK. Report No. 19.

Balakrishnan, V. & Yeow, P .H. P. 2007. Texting Satisfaction: Does age and gender make a difference In H. Mouratidis (eds) *International Journal of computer science and security.* CSC publishers. pp. 85-96.

Balancing Act News. 2011. Airtel Ghana Lay Ground for Fibre Optic Cables. [online] Available: http://www.balancingact-africa.com/news/en/issue-no-567/internet/airtel-ghana-lays-un/en (2014, August 1).

Barwa, S. D. 1995. Structural Adjustment Programmes and the Urban Informal Sector in Ghana: Issues in Development Discussion Paper 3, ILO.

Barzilai-Nahon, K. 2006. "Gaps and Bits: Conceptualizing Measurements for Digital Divide/s". *The Information Society*, 22: 269–278.

Bassey, M. 1999. *Case Study Research in Educational Settings.* Buckingham, Uk: Open University Press.

Beneria, L. & Sen, G. 1981. Accumulation, Reproduction and "Women Role in Economic Development" Boserup Revisited. *Signs,* 7(2):279-298.

Benjamin, C. 2007. The Relocation at Reinvention of Old Fadama. The Statesman (January 15).

Bennet, S. 2012. Digital Natives: In Z. Yan (eds) *Encyclopedia of Cyber behaviour.* IGI Global. pp. 212-219.

Benson, I. 2012. Vodafone Owns Ghana Fibre Optics Backbone: Witness tell court. [online]. Available: http://thechronicle.com.gh/vodafon-owns-ghanas-fibre-optic-backbone-witness-tells-court/ (2014, August 1).

Berger, G. 2008. 1001 Uses for a Cellphone. *Mail & Guardian.* [online] Available: http://www.mg.co.za/article/2008-10-16-1-uses-for-a-cellphone (2014, March 2).

Berger, R. 2013. "Now I see it, Now I don't: Researchers Position and Reflexivity in Qualitative Research". *Qualitative Research*, 1-16.

Berry, L. V. (ed.) 1994. Ghana. A Country Study: Washington GPO for the Library of Congress.

Bertolini, R. 2001. *Telecommunication Services in Sub-Saharan Africa. Analysis of Access and Use in Southern Volta Region in Ghana.* Development Economics Policy, Vol. 26. Verlag.

Blunch, H., Canagarajah, S., & Raju, D. 2001. "The Informal Sector Revisited: A Synthesis across Space and Time: *Social Protection Discussion Paper Series, No. 0119,* World Bank.

Boateng, R. 2011. "Mobile phones and Micro-trading activities - Conceptualizing the link". *Info,* 13 (5): 48-62.

Boateng, R. 2010. "Enhancing Micro-Trading Capabilities through Mobile Phones: The Case of Women Traders in Ghana". *International Federation for Information Processing (IFIP) Working Group 9.4*, 20(1): 2-8.

Boohene, R., Sheridan, A., & Kotey, B. 2008. Gender, Personal Values, Strategies and Small Business Performance. A Ghanaian Case Study. *Equal Opportunities International,* 27 (3): 237-257.

Botelho, A.J. & Alves, A.D.S. 2007. Mobile Use/Adoption by Micro Small and Medium Enterprises in Latin America and the Caribbean. Mobile Opportunities: Poverty and Telephony Access in Latin America and the Caribbean. Background Paper. LIMA DIRSI.

Bourdieu, P. 1996. Understanding. *Theory, Culture, and Society*, *13*(2): 17–37.

Boyatzis, R. 1998. *Transforming Qualitative Information: Thematic Analysis and Code Development*. Thousand Oaks, CA: Sage.

Bradbury-Jones, C. 2007. Enhancing Rigor in Qualitative Health Research: Exploring Subjectivity through Peshkin's I's. *Journal of Advanced Nursing,* 59: 290–298.

Breman, J.C. 1980. The Informal Sector in Research: Theory & Practice. Casp 3, Rotterdam.

Brinkman, I., De Bruijn, M., & Bilal, H. 2009. The Mobile Phone, 'Modernity' and Change in Khartoun, Sudan. In De Bruijn, M, Nyamnjoh, F & Brinkman, I (Eds). *Mobile Phones. The New Talking Drums of Africa.* Langaa . pp. 69-91.

Bromley, R. 1978. "Introduction-The Urban Informal Sector: Why Is It Worth Discussing"? *World Development* 6(9/10): 1033-1039.

Bromley, R. & Gery, C. 1979. *Casual Work and Poverty in Third Cities*. Chichester: Wiley

Brown, C.K. 1994. *Gender Roles in Households Allocating for Resources and Decision Making in Ghana.* Ghana: FADEP.

Bryman, A. 2008. *Social Research Methods* (3rd Ed), New York: Oxford University Press.

Bryman, A., & Burgess, R, G. 1994. Reflections on Qualitative Data Analysis. In A. Bryman & G. Burgess, (Eds.), *Analyzing Qualitative Data* New York: Routledge pp. 216–226.

Budlender, D. 2011. Statistics on Informal Employment in Ghana: WIEGO Statistical Brief No. 4.

Burdock, G. A., Carabin, I. G., & Crincoli, C. M. 2009. Safety Assessment of Kola Nut Extract as a Food Ingredient. *Food and Chemical Toxicology,* 47 (8): 1725–1732.

Burgess, R. G. 1982. Approaches to Field Research. In R. G. Burgess (Ed.), *Field Research: A Sourcebook and Field Manual* London. New York: Routledge. pp. 1–19.

Burgess, R.G. 1984. *In the Field: An Introduction to Field Research*. London: Unwin Hyman

Calefato, P. 2003. 'Wearing Communications" Home, Travel, Space', In L. Fortunati, J.E. Katz & R. Riccini (eds); Mediating *the Human Body: Technology, Communication and Fashion* Mahway, NJ: Lawrence Erlbaum. pp. 163-168.

Campbell, S. W. & Russo, T.C. 2003. "The Social Construction of Mobile Telephony: An Application of the Social Influence Model to Perceptions and Uses of Mobile Phones within Personal Communication Networks". *Communication Monographs, 70(4): 317-334.*

Carr, M. & Chen, M. A. 2001. Globalisation and the Informal Economy: How Global Trade and Investment Impact on the Working Poor. WIEGO.

Castells, M. & Portes, A. 1989. 'World Underneath: the Origins, Dynamics, and Effects of the Informal Economy', In A. Portes, M. Castells, L.A. Benton (eds). *The Informal Economy,* Baltimore: Johns Hopkins University Press (pp. 11-37).

Castells, M., Fernandez-Ardevol, M., Qiu, J.I. & Sey, A. 2007. *Mobile communication and Society: A global perspective.* Massachusetts Institute of Technology.

Chair, C.A. 2014. Mobile Phones for Development. How Have Women in the Informal Sector Used Their Mobile Phones to Enhance Themselves in Their Business? A MsocSci Mini Dissertation Submitted to University of Cape Town. South Africa.

Chan, J. 2010. "Foxconn: The Global Predator", Global Dialogue (International Sociological Association) 1 2):1-3.

Chan, M. 2013. "Mobile Phones and the Good Life: Examining the Relationships among Mobile Phone Use, Social Capital and Subjective Well- Being". *New Media and Society*, 20 (10): 1-18.

Chan, J. & Ngai, P. 2010. "Suicide as Protest for the New Generation of Chinese Migrant Workers: Foxconn, Global, Capital and the State". *The Asia Pacific Journal* 37:2-10.

Chandler, D. 2008. The Transmission Model of Communication. Available :http://visual-memory.co.uk/daniel/Documents/short/trans.html (2014, March 10).

Chen, M. A. 2012. The Informal Economy; Definitions, Theories & Policies. WIEGO Working paper No. 1.

Chen, M. A. 2007. Rethinking the Informal Sector: Economy Linkages with the Formal Economy and the Formal Regulatory Environment. Economic and Social Affairs. DESA Working Paper No. 46.

Chen, M. A. 2001. Women in the Informal Sector: A Global Picture, The Global Movement.

Chen, M. A., Vanek, J., Lund, F., & Heintz, J. with Bonner, C. & Jhabvala, R. 2005. *The Progress of the World's Women. Women, Work and Poverty.* New York: UNIFEM.

Chihara, M, 2000. "Lying on the Go" Baston: Phoenix.

Chiumba, S. & Nyamanhindi, R. 2012. Negotiating the Crisis: Mobile Phones and the Informal Economy in Zimbabwe. In S. Chiumba, S. & M. Musemwa(eds) *Crisis! What a Crisis? The Multiple Dimension of the Zimbabwean Crisis.* Human Sciences Research Council Press. Pp. 62-77.

Chu, Y. 1992. "Informal Work in Hong Kong" *International Journal of Urban Regional Research,* 16:420-441.

CIA World fact book, 2014. Ghana. Available: https://www.cia.gov/library/publications/the-world-factbook/geos/gh.html (2014, June 5).

Clark, G. 2010. Gender Fictions and Gender Tensions Involving "Traditional" Asante Market Women. *African Studies Quarterly,* 11(2 & 3) 43:66.

Clark, G. 1994. *Onions are my Husband: Survival and Accumulation by West African Market Women".* Chicago, IL & London: University of Chicago Press

Cnbc.com. 2013. Nokia's Market Share Slumps, Unveils New Smart Phones. [online] Available: http://www.cnbc.com/id/100734200 (2013, December 5).

Comer, J.C. & Wikle, T.A. 2008. "World Diffusion of the Cellular Telephone, 1995-2005". *The professional Geographer* 60(2):252.

Crotty, M. 1998. *The Foundations of Social Research: Meanings and Perspectives in the Research Process.* Australia: Allen & Unwin.

Crowe, S., Cresswell., K., Robertson, A., Huby, G., Avery, A., & Sheikh, A. 2011. "The Case Study Approach". *Medical Research Methodology,* 11(100):1-9.

Crystal, D. 2006. *Languages of the Internet. "Engaging & Provocative"* Nature. (2nd Edition). Cambridge University Press.

Daddieh, C.K. 2003. Gender Issues in Ghanaian Higher Education. (Occasional Paper No. 36) Accra, Ghana: The Institute of Economic Affair.

Dakubu, K. M. E 2009. The Historical Dynamic of Multilingualism in Accra. In F. Mc Laughlin (ed)., *Languages of Urban Africa.* Continuum International Publishing. pp 19-31.

Dakubu, K.M. E. 1997. "*Korle Meets the Sea" A Sociolinguist History of Accra*" Oxford University Press.

Darkwah, A. K. 2007. Making Hay while the Sun Shines: Ghanaian Female Traders and their Insertion into the Global Economy". In N. Gunewardena & A. Kingsolver (ed). *The Gender of Globalisation: Women Navigating Cultural and Economic Marginality,* Oxford: James Currey. pp. 61-83.

Darkwah, A.K. 2002. Going Global: Ghanaian Female Transnational Traders in an Era of Globalisation". Unpublished PhD Dissertation. University of Wisconsin, Madison.

Dasgupta, P. 2000. 'Trust as a Commodity', in D. Gambetta, (ed.) *Trust: Making and Breaking Cooperative Relations*: Oxford: Blackwell.

Dasgupta, P. 1988. Trust as a commodity. In D. Gambetta (ed.), *Trust: Making and Breaking Cooperative Relations* . Oxford: Blackwell. pp. 49–72.

Dasgupta, B. 1973. "Calcutta's 'Informal Sector'", *IDS Bulletin.* 5: (2/3): 53- 75.

De Bruijn M, Nyamnjoh F & Brinkman I (Eds). 2009. Introduction: Mobile Communication and Social Spaces in Africa. In M de Bruijn, F Nyamnjoh & I Brinkman (Eds) *Mobile Phones: The New Talking Drums of Everyday Africa.* Langaa, pp. 1-11.

Dejene, Y. 2008. Ghana Country Gender Profile. Human Development Department (OSHD) Report.

Dejene, Y. 2007. Promoting Women's Economic Empowerment in Africa. Available: http://www.afdb.org/fileadmin/uploads/afdb/Documents/Knowledge/25040341-FR-DRAFT-DEJENE.9-15-07DOC.PDF.

De Soto, H. 1989. *The Other Path: The Invisibly Revolution in the Third World*: New York: Harper & Row.

De Tona, C. 2006. But What is Interesting is the Story of Why and How Migration Happened. *Forum: Qualitative Social Research* 7: Article 13. Available: http://www.qualitative-research.net/ fqs-texte/3-06/06-3-13-e.htm.

De Vrie, I. 2005. Mobile Telephony: Realizing the Dream of Ideal Communication. In Hamill, L. & Larsen, A. (Eds). *Mobile World. Past, Present and Future. Springer.* pp. 11-28.

DiMaggio, P. & Hargittai, E. 2001. From the 'Digital Divide' to 'Digital Inequality': Studying Internet Use as Penetration Increases. Center for Arts and Cultural Policy Studies, Princeton University, Working Paper #15.

Dogbevi, E. K. 2012. Ghana Attains 75% Mobile Phone Penetration End Of 2010, Ghana Business News Online.

Donner, J. 2008. "Research Approaches to Mobile Use in the Developing World: A Review of the Literature," *The Information Society* (24):140-159.

Donner, J. 2007. The Rules of Beeping: Exchanging Messages via Intentional Missed Calls on Mobile Phones, *Journal of Computer-Mediated Communication,* 13, 1.

Donner, J. 2004. Microentrepreneurs and Mobiles: An Exploration of the Uses of Mobile Phones by Small Business Owners in Rwanda. *Information Technologies and International Development 2*(1), 1–22.

Donner, J. & Escobari, M. 2009. A Review of the Research on Mobile Use by Micro and Small Enterprises (MSEs). *ICTD*; 17-26.

Dorosh, P. 1989. Economics of Cassava in Africa. In J.S. Sarma (ed) *Summary Proceedings of A Workshop on Trends And Prospects Of Cassava in the Third World*. International Food Policy Research Institute. Pp 56-72.

Dowuona, S. N. N. 2013. Mobile Penetration Cross 100% in Ghana. [online] Available: http://business.myjoyonline.com/pages/news/201302/100891.php (2013, December 15).

Dowuona, S.N. 2012 . Expresso to land ACE Fibre Optic Cable in Ghana. [online] Available: http://business.myjoyonline.com/pages/news/201203/83371.php (2014, January 10).

Dowuona, S. 2010. Rlg Shows the Way in Mobile Phone Manufacturing in Africa. [online] Available: http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=195135.

Duncombe, R., & Heeks, R. 2001. *Information and Communication Technologies (ICTs) and Small Enterprise in Africa.* Manchester, UK: Development Informatics Group, University of Manchester.

Duncombe, R., Kintu, R., & Nakangu, B. 2006. E-Commerce for Small Enterprise Development A Handbook for Entrepreneurs in Developing Countries. Retrieved from http://www.sed.manchester.ac.uk/idpm/research/is/ictsme/index.htm.

Dunne, M. & King, R. 2003. "Outside theory: An Exploration of the Links Between Education and Work for Ghanaian Market Trade". *Journal of Education and Work* 16(1):27-44.

Dunn, H. & Dunn, L. 2006. *Genderstanding Mobile Telephony, Women, Men and Their Use of Cellular Phones in Caribbean. Mobile Opportunities: Poverty and Telephony Access in Latin America and the Caribbean.* International Development Research Centre (IDRC).

Dzisi, S., Buckley, P., Selvarajah, C. & Meyer, D. 2008. *Women Entrepreneurial Activities in Developing Economies: Ghana as a Case Study*. AGSE.

Dziwornu, R. K. 2013. "Factors Affecting Mobile Phone Purchase in the Greater Accra Region: A Binary Logit Model Approach". *International Journal of Marketing Studies* 5(6):151-163.

Eades, J.S. 1993. *Strangers and Traders: Yoruba migrants, Markets and the State in Northern Ghana.* London, Edinburgh University Press.

Edwards, D. 1997. *Discourse and Cognition*. London: Sage.

Eggleston, K., Jensen, R., & Zeckhauser, R. 2002. Information and Telecommunication Technologies, Markets, and Economic Development. In G. Kirkman, P. Cornelius, J. Sachs, & K. Schwab (Eds.), *The Global Information Technology Report 2001–2002: Readiness for the Networked World.* New York: Oxford University Press. pp. 62-74.

Ellison, N.B., Steinfield, C. & Lampe. C. 2007. The Benefits of Facebook "Friends:" Social Capital and College Students' Use of Online Social Network Sites. *Journal of Computer-Mediated Communication* 12 (4): 1143–1168.

Elwood, S.A. & Martin, D.G. 2000. "Placing Interviews: Location and Scales of Power in Qualitative Research". *Professional Geographer* 52 (4): 649-657.

Essegbey, G. & Frempong, G. K. 2011. "Creating Space for Innovation -The Case of Mobile Telephony in Micro and Small Enterprises in Ghana". *Technovation* (31): 679-688.

Esselaar, S., Stork, C., Ndiwalana, A., &. Deen-Swarray, M. 2007. "ICT Usage and Its Impact on Profitability of SMEs in 13 African Countries," *Information Technologies and International Development* (4):87-100.

Etzo, S. & Collender, G. 2010. "Briefing. The Mobile Phone 'Revolution' In Africa: Rhetoric or Reality? *African Affairs* 109(437):659-668.

Falch, M., & Anyimadu, A. 2003. "Tele-Centres as a Way of Achieving Universal Access-The Case of Ghana". *Telecommunications Policy, 27*: 21-39.

Fama (Chief), A. S. A. 2004. "*Practitioner's Handbook for the Ifá Professional*", Ile Orunmila Communications.

Farrell, G., Roman, J., & Matthew, F. 2000. "Conceptualizing Shadow Economy", *Journal of International Affairs* 53 (2): 387-412.

Feige, E. L. (ed) 1989. *The Underground Economies:Tax Evasion and Information Distortion.* Cambridge University Press .

Fischer, C. 1992. *America Calling. A Social History of the Telephone to 1940.* Berkeley: University of California Press.

Flick, U. (ed). 2007. *Doing Interviews*. The Sage Qualitative Research Kit. Kvale. Sage Publications.

Fortunati, L. 2005. Mobile Phone and the Presentation of Self. In R. Ling & P. E. Pedersen (eds) *Mobile Communication: Re-negotiation of the Social Sphere*. London: Springer-Verlag. Pp. 203-224.

Fortunati, L. 2000. The Mobile Phone: New Social Categories and Relations. University of Trieste. Available: http://www.telenor.no/fou/prosjekter/Fremtidens_Brukere/seminarer/mobilpresentasjoner/Proceedings%20_FoU%20notat_.pdf.

Fox, K. 200.1 *Evolution, Alienation and Gossip. The Role of Mobile Telecommunication in the 21st Century.* Social Issues Research Centre. Oxford.

Frempong, G. 2012. Understanding What is Happening in ICT in Ghana. A Supply and Demand Analysis of the ICT Sector. Evidence for ICT Policy Action. Policy paper 4. IDRC.

Frempong, G. K. 2009. "Mobile Telephone Opportunities: The Case of Micro-and Small Enterprises in Ghana". *The Journal of Policy, Regulation and Strategy for Telecommunications,* 11(2): 79–94.

Frempong, G. K. 2007. Telecommunication Sector Performance Review. A Supply Side Analysis of Policy Outcomes.

Frempong, G.K. 1996. "Developing Telecommunications in Ghana". *1EEE Technology and Society Magazine,* 23-31.

Frempong, G. K. & Atubra, W.H. 2001. Liberalisation of Telecom: The Ghana's Experience. *Telecommunication Policy,* 25:197-210.

Frempong, G. K. & Essegbey, G.O. 2006. ''Ghana Case Study'', in Stork, C. & Esselaar, S. (Eds), *Towards an African e-Index: SME e-Access and Usage*, Link Centre, Witwatersrand.

Frempong, G., Essegbey, G. & Tetteh, E. 2007. Survey on the Use of Mobile Telephones for Micro and Small Business Development: The Case of Ghana. Accra: CSIR-Science and Technology Policy Research (STEPRI).

Frempong, G.K., Esselaar, S., Stork, C., & Anyimadu A. 2005. Ghana. In A. Gillward(Ed), *Towards an African e-Index: Household and Individual ICT Access and Usage.* The Link Centre, Wit University School of Public and Development Management (pp 94-105).

Frisina, A. 2006. Back-Talk Focus Groups as A Follow-Up Tool in Qualitative Migration Research: The Missing Link? *Forum: Qualitative Social Research* 7 (3): 1–8.

Fuchs, C. & Horak, E. 2008. Africa and the Digital Divide. *Telematics and informatics* 25: 99-116.

Gabre-Madhin, E.Z. 2001. *Market Institutions, Transaction Cost and Social Capital in the Ethiopian Grain market.* International Food Policy Research Institute Research Report, Vol 124. Intl Food policy Research Institute.

Geertz, C. 1978. "The Bazaar Economy: Information and Search in Peasant Market. Papers and Proceedings of the Nineteenth Annual Meeting of the American Association". *The American Economic Review* 68(2):28-32.

Geertz, C. 1963. *Social Development and Economic Change in Two Indonesian Towns. Peddlers and Princes*. Chicago: University of Chicago Press.

General News, 2003. Mobile Phones Evolve from Status Symbols to Essential Gadgets. [online] Available: http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=36243 (2012, May 1).

Gerber, J. 1999. Measuring the Informal Economic Sector. San Diego Dialogue Report: Cross Border Economic Bulletin 3 (1).

Gergen, M. 2005. Using Mobile Phones: A Survey of College Women and Men. Paper Presented At The 55th Annual International Communication Association Conference, Preconference Session, Mobile Communication: Current Research And Future Directions. New York May 26.

Gergen, K. J. 2002. The Challenge of Absent Presence. In .J E. Katz, & M.Aakhus (eds.); *Perpetual Contact. Mobile Communication, Private Talk, Public Performance*. Cambridge: Cambridge University Press. pp. 227-241.

Gergen, M. & Gergen, K. (Eds), 2003.*Social construction*: A reader. Thousand Oaks, CA: Sage.

Gerxhani, K. 2004. "The Informal Sector in Developed and Less Developed Countries: A Literature Survey". *Public Choice* 120 (314): 267-300.

Geser, H. 2006. '"Is the Cell Phone Undermining the Social Order?' Understanding Mobile Technology from a Sociological Perspective" . *Knowledge Technology & Policy,* 19(1):8-18.

Geser, H. 2004. Towards a Sociological Theory of the Mobile Phone. (*Release 3.0)*, Retrieved from http://socio.ch/mobile/t_geser1.htm.

Ghana News Agency (GNA). 2012**a**. Glo Mobile Launches Ghana Network. [online] Available: www.ghananewsagency.org/economics/glo-mobile-launches-ghana-network-42808 (2012, April 31).

Ghana News Agency (GNA). 2012**b**. Mtn Says Fibre Optic Cuts Are Major Operational Challenges. [online] Available: http://www.ghananewsagency.org/social/mtn-says-fiber-optic-cuts-are-major-operational-challenges-51045 (2013, December, 10).

Ghana News Agency, 2011. Glo Launches Fibre-Optics in Ghana [online] Available: http://ghananewsagency.org/science/glo-launches-fibre-optic-cable-in-ghana--27529 (2012, April 8).

Ghana News Agency, 2010. New Secretariat for National Committee on Informal Economy. The Statesman (January 27).

Ghana Place Names.Com [online] Available: https://sites.google.com/site/ghanaplacenames/places-in-perspective/markets (2014, May 2).

Ghana Statistical Service, 2014. Final Gross Domestic Product for 2012 and Revised Gross Domestic Product for 2013. Retrieved from http://www.statsghana.gov.gh/.

Ghana Statistical Service, 2013**a**. 2010 Population and Housing Census Report, Women and Men in Ghana. Retrieved from http://www.statsghana.gov.gh/.

Ghana Statistical Service, 2013**b**. Ghana Living Standard Survey Round 6 with Labour Force Module (GLSS 6/LFS) 2012/2013. Three Cycle Labour Force Report (Fourth To Sixth Cycle Report). Retrieved from http://www.statsghana.gov.gh/.

Ghana Statistical Service, 2013**c**. 2010 Population and Housing Census Report, Regional Analytical report Greater Accra Region. Retrieved from http://www.statsghana.gov.gh/.

Ghana Statistical Service. 2012. 2010 Population and Housing Census: Summary of Final Results, Ghana Statistical Service. Accra Retrieved from http://www.statsghana.gov.gh/.

Ghana Statistical Service. 2008. Ghana Living Standards Survey. Report of the Fifth Round (GLSS 5) 2005/2006 Survey.

Ghana Statistical Service, 2005. Ghana 2003 Core Welfare Indicators Questionnaire (CWIQ II) Survey Report: Statistical Abstract (Accra).

Ghana Web, 2003. Ghana Telephones and Communication. [online] Available: http://www.ghanaweb.com/GhanaHomePage/communication (2012, August, 5).

Giddens, A. (2006): *Sociology.* Cambridge: Polity Press.

Gikenye, W. & Ocholla, D. 2010. The Diffusion and Impact of Mobile Phones on the Informal Sector in Kenya. 11th Dis-Annual Conference, University of Zululand, South Africa 2nd to 3rd September.

Goodman, J. 2005. "Linking Mobile Phone Ownership and Use to Social Capital in Rural South Africa and Tanzania". In Africa: the Impact of Mobile Phones. *The Vodafone Policy Paper Series,* (2): 53-65.

Goni, A.A. 2011. Assessing the Operational Performance of Vodafone Ghana Company Limited in the Ghanaian Telecommunication Industry. A Commonwealth Executive Master of Business Administration (CEMBA) Thesis Submitted to the Institute of Distance Learning, Kwame Nkrumah University Of Science And Technology.

Greenstreet, M. 2003. Employment of Women in Ghana. EBSCO. 117-129.

Greenstreet, M. 1978. *Various Salient Features Concerning the Employment of Women Workers in Ghana.* IAE.

Grieco M., N. Apt and J. Turner, 1996. *At Christmas and on Rainy Days: Transport, Travel and the Female Traders of Accra.* Aldershot: Avebury.

Grieco, M., Turner, J., & Kwakye, E. A. 1995. Informal Public Transport and the Woman Trader in Accra, Ghana. Paper Presented at the Seventh World Conference on Transport Research, Sydney, 16-21 July.

Guest, G., Bunce, A., & Johnson, L. 2006. "How Many Interviews Are Enough? An Experiment with Data Saturation and Variability". *Field Methods,* 59-82.

Gupta, A., & Ferguson, J. 1997. The Field as Site, Method and Location in Anthropology. In A. Gupta, *Anthropological Locations and Grounds of a Field Science*. California: University of California Press.

Gutmann, P.M 1977. "The Subterranean Economy". *Financial Analysts Journal,* 33 (6): 26–27.

Haddon, L. 2000. The Social Consequences of Mobile Telephony: Framing Questions. A Paper Presented at the Seminar 'Sosiale Konsekvenser av Mobiltelefoni', Organised by Telenor, 16th June, 2000, Oslo.

Haggarty L., Shirley, M.M., & Wallsten, S. 2003. *Telecommunication Reform in Ghana.* World Bank Development Research Group. Investment Climate Team.

Hahn, H.P. & Kibora, L. 2008. "The Domestication of the Mobile Phone: Oral Society and New ICTs in Burkina Faso". *Journal of Modern African Studies* 46(1):87-109.

Hammersley, M. 1992. *What's Wrong with Ethnography?* London: Routledge.

Hampel-Milgrosa, A. 2009. Gender Issues in Doing Business: An Analysis Using Case Studies of Ghanaian Women Entrepreneurs. Consultant Report Submitted to the Danish International Development Agency (DANIDA).

Hargittai, E. 2004. How Wide a Web? Social Inequality in the Digital Age. A PhD. Dissertation, Princeton, NJ, Princeton University, Sociology Department.

Hargittai, E. 2003. The Digital Divide and What to Do About It. In D.C Jones (ed); New Economy Handbook. San Diego, CA: Academic Press. pp. 821-887.

Hargittai, E. & Hinnant, A. 2008. "Digital Inequality. Differences in Young Adults Uses of the Internet". *Communication Research*, 35 (5):602-621.

Hargittai, E. & Walejko, G. 2008. "The Participation Divide: Content Creation and Sharing in the Digital Age". *Information, Communication & Society*, 11(2); 239-256.

Harris, S. R. 2010. *What is Constructionism? Navigating its Use in Sociology.* Lynne Renner.

Hart, K. 2007. The Urban Informal Economy in Retrospect. The Memory Bank. Available: http://thememorybank.co.uk/2007/06/08/the-urban-informal-economy-in-retrospect/.

Hart, K. 1987. Informal Economy. In J.R.H.I. Eatwell Palgrave & M. Milgate (Eds): *The New Palgrave: A Dictionary of Economics* – London. Vol. 2:845-846.

Hart, K. 1973. "Informal Income Opportunities and Urban Employment in Ghana". *The Journal of Modern Africa Studies* 11(1): 61-89.

Hart, K. 1970. 'Small-Scale Entrepreneurs in Ghana and Development Planning', *Journal of Development Studies,* 28: 705–16.

Heintz, J. & Pickbourne, L. 2012. The Determinants of Selection into Non-Agricultural Self Employment in Ghana. *Margin-The Journal of Applied Economics Research* 6(2):181-209.

Hinson, R.E. 2011. "Banking the Poor: The Role of Mobiles". *Journal of Financial Services Marketing,* (15):320-333.

Horst, H. & Miiler, D. 2007. The Cellphone: *An Anthropology of Communication*. Oxford: Berg.

Horton, F. W. Jr. 2007. *Understanding Information Literacy*: A primer. UNESCO.

Hussmanns, R. 2004. Measuring the Informal Economy: From Employment in the Informal Sector to Informal Employment. A Working Paper No. 53 ILO.

Huyer, S., Hafkin, N., Ertl H., & Dryburgh H., (2006). 'Women in the Information Society'. In G. Sciadas (ed.) *From the Digital Divide to Digital Opportunities: Measuring Infostates for Development*. pp. 135-195.

Igboguide.org, (n.d). Kola Nut. [Online] Available: http://www.igboguide.org/HT-chapter8.htm. (2014, August 2).

Information Technology Topics, 2011. Cellular Networks Generation of Standards for Mobiles Phones, Telecommunications, Data Services (0G, 1G, 2G, 3G, 4G, 5G). [online] Available: http://information-technology-topics.blogspot.com/2011/09/cellular-generations-0g-1g-2g-3g-4g-5g.html (2014, August 1).

Inside Watch Africa, 2012. Ghana Popular Market- The Historic Journey. [online]. Available: http://webcache.googleusercontent.com/search?q=cache:7WE_44iBKTEJ:insidewatchafrica.com/ghana%25E2%2580%2599s-popular-makola-market-the-historic-Journey/+&cd=3&hl=en&ct=clnk&gl=za (2014, August 10).

Institute of Statistical, Social and Economic Research (ISSER), 2011. *The State of the Ghanaian Economy in 2010*. University of Ghana, Legon: ISSER.

International Labour Office (ILO), 2002**a**. *"Decent Work and the Informal Economy"*, Report VI, International Labour Conference, 90th Session.

International Labour Office (ILO), 2002**b**. Women and Men in the informal Economy: A statistical picture.

International Labour Office (ILO), 1972. *Employment, Incomes and Equality: A Strategy for Increasing Productive Employment in Kenya*. Geneva: ILO.

International Telecommunications Union (ITU). 2014. The World in 2014: ICTs Facts and Figures. [online] Available: http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2014-e.pdf.

International Telecommunication Union (ITU) 2011. *Measuring the Information Society, ICT Opportunity Index and World Telecommunication/ICT Indicators*. ITU.

Iqbal, Z. 2010. "Gender Differences in Mobile Phone Use: What Communication Motives Does it Gratify?" *European Journal of Scientific Research* 46, (4):510-522.

Issah, Z. 2013. Mobile Phone Usage Increase, My Ghana Online.

Ito, M. & Daisuke, O. 2003. Mobile Phone, Japanese Youth and the Re-placement of Social. Front stage, Back Stage, the 4th Conference of the Social Consequences of Mobile Telephony.

Jagun, A., Heeks, R., & Whalley, J. 2008."The Impact of Mobile Telephony on Developing Country Micro-Enterprise: A Nigerian Case Study," *Information Technologies and International Development,* (4): 47-65.

Jarvis, G. 2002. The Rise and Fall of Cocaine Cola. [online] Available: http://stipulae.johnvanhulst.com/DOCS/PDF/Kola%20nut.pdf (2014, August 14).

James, J. 2013. "Mobile phone Use in Africa: Implications for Inequality and the Digital Divide". *Social Science Computer Review*, 32(1):113-116.

James, J. 2011. "Are Changes in the Digital Divide Consistent With Global Equality or Inequality". *The Information Society,* 27:121-128.

James, J. 2002. "Information Technology, Transactions Costs and Patterns of Globalization in Developing Countries". *Review of Social Economy,* 60 (4): 507–19.

James, J. & Versteeg, M. 2007. "Mobile Phones in Africa: How Much Do We Really Know?" *Social Indicators Research,* 84(1):117-126.

Jenkins, H. 2006. *Convergence Culture. Where The Old And New Media Collide*. New York University Press.

Jensen, R. 2007. "The Digital Provide: Information (Technology), Market Performance, and Welfare in the South Indian Fisheries Sector," *Quarterly Journal of Economics,* (122): 879-924.

Josselson, R. 2007. The Ethical Attitude in Narrative Research: Principles and Practicalities. In: D.J. Clandinin (ed.) *Handbook of Narrative Inquiry: Mapping a Methodology*. Thousand Oaks, CA: Sage. pp. 537–566.

Kabeer, N. 2012. Women Economic Empowerment at Inclusive Growth: Labor Market and Enterprise Development. Discussing Paper, 29/12.

Kabeer, N. 2011. Contextualising the Economic Pathways of Women's Empowerment. Findings from A Multi-Country Research Programme. Pathways Policy Paper. Brighton: Pathways of Women's Empowerment. RPC.

Kabeer, N., Milward, K. & Sudarshan, R. 2013. "Organizing Women Workers in the Informal Economy". *Gender & Development,* 21(2):249-263.

Kacen, L. & Chaitin, J. 2006. "The Times They are a Changing": Undertaking Qualitative Research in Ambiguous, Conflictual and Changing Contexts". *Qualitative Report,* 11(2): 209–228.

Kalba, K. 2008. "The Adoption of Mobile Phones in Emerging Markets. Global Diffusion and the Rural Challenge". *International Journal of Communication,* 2: 631-661.

Kamga, O. 2006. "Mobile phone in Cote d'Ivoire: Uses and self-fulfillment," *Information and Communication Technologies and Development, (ICTD),* 184-192.

Katz, J. E. 2006. *Magic in the Air. Mobile Communication and the Transformation of Social Life.* New Brunswick NJ: Transaction.

Katz, J. E. 1999. *Connections: Social and Cultural Studies of the Telephone in American Life.* New Brunswick, NJ: Transaction Publishers.

Katz, J. E., & Aakhus, M. 2002. Introduction: Framing the Issues. In J. E. Katz; & M. Aakhus, (Eds.) *Perpetual contact: Mobile Communication, Private Talk, Public Performance.* Cambridge: Cambridge University Press. pp. 1–13.

Katz, J.E. & Sugiyama, S. 2005. Mobile Phones as Fashion Statement: The Co-Creation of Mobile Communications Public Meaning. In R. Ling & P. E. Pedersen. *Mobile Communication: Re-Negotiation of the Social Sphere.* Springer-Verlag. Pp. 63-81.

Kauffman, R.J. & Techatassanasoontorn, A. A. 2005. "Is There A Global Divide For Wireless Technologies?" *Journal of the Association for Information System,* 6(12):338-382.

Kay, D.D. 2011. The Relationship between Formal and Informal Employment in South Africa. A Master Thesis Submitted to the Graduate College of the University of Illinois at Urbana-Champaign.

Kellerman, A. 2006. *Personal Mobilities.* New York: Routledge.

Kenny, C. 2002. "Information and Communication Technologies for Direct Poverty Alleviation: Costs and Benefits". *Development Policy Review* 20:141–157.

Keteku, N.W. 1999. Educational Reform in Ghana: The Senior Secondary School. [online] Available: http://www.bibl.u-szeged.hu/oseas_adsec/ghana.html _(2014, June 14).

Kilby, P. 1971. Hunting the Heffalump. In P. Kilby, (Ed.) *Entrepreneurship and Economic Development.* The Free Press: London. pp. 1-40.

King, R. 2001. "Influencing Policy: A Case Study of Kumasi Central Market Women". *Journal of the Centre for Social policy Studies,* 2 (1): 8-16.

Kim, K, & Frey, R.J 2005. Kola Nut. In L.L. Longue (ed.), *Gale Encyclopaedia of Alternative Medicine* (2nd edition). Thomson Gale: pp.1164-1164.

Kling, R. 1998. Technological and Social Access on Computing, Information and Communication Technologies. White Paper for Presidential Advisory Committee on High-Performance Computing and Communications, Information Technology, and the Next Generation Internet.

Koutras, E. 2006. The Use of Mobile Phone by Generation Y Students at Two Universities in the City of Johannesburg. A Master Thesis Submitted to University of South Africa.

Kumar, A. 2010. Overview of Cellular Mobile Networks, *In* A. Kumar, *Implementing Mobile TV: ATSC Mobile DTV, Mediaflo, Dvb-H/sh, Dmb, Wimax, 3G Systems and Rich Media Application.* (2nd edition) Focal Press. pp. 105-135.

Kumar, K. J. & Thomas, A. O. 2006. "Telecommunications and Development: The Cellular Mobile "Revolution" in India and China". *Journal of Creative Communication,* (1):297-309.

Kushchu, I. 2007. Positive Contributions of Mobile Phone to Society. A Research Report for the Mobile Society Research Institute. NTT DoCoMo Inc. Japan. Mobile Government Consortium International, UK.

Kvasny, L. 2002. "A Conceptual Framework for Examining Digital Inequality" *Eighth Americas Conference on Information Systems*, pp. 1798-1805.

Kwakwa, A. 2012. "Mobile Phone Usage by Micro and Small Scale Enterprises in Semi-Rural Ghana". *International Review of Management and Marketing,* 2 (3):156-164.

Kyem, P. A. K. & Le Marie, P.K. 2006. "Transforming Recent Gains in the Digital Divide into Digital Opportunities: Africa and the Boom in Mobile Phone Subscription" *EJISDC* 28 (5): 1-16.

Lacohee, H., Wakeford, N., & Pearson, I. 2003. "A Social History of the Mobile Telephone with a View Of Its Future". *BT Technology Journal,* 21(3):203-211.

Lasen, A. 2005. History Repeating? A Comparison of the Launch and Uses of Fixed and Mobile Phones. In L. Hamill, & A. Larsen, (Eds). *Mobile World. Past, Present and Future.* Springer. pp. 29-57.

Lemish, D. & Cohen, A.A. 2005. "On the Gendered Nature of Mobile Phone Culture in Israel: Sex roles". *A Journal of Research,* 52(7/8):511-521.

Leonard, M. 2000. "Coping Strategies in Developed and Developing Societies. The Workings of the Informal Economy". *Journal of International Development,* 12, 1069-1085.

Licoppe, C. 2004. '"Connected Presence": The Emergence of a New Repertoire for Managing Social Relationships in a Changing Communication Technospace". *Environment and Planning D: Society and Space,* 22(1): 135–56.

Ling, R. 2008. *New Tech, New Ties: How Mobile Communication is Reshaping Social Cohesion.* Cambridge: Massa MIT Press.

Ling, R. 2004. *Mobile Connection: The Cell Phone's Impact on Society.* San Francisco: Morgan Kaufmann.

Ling, R. 1998. "She calls, [but] it's for both of us you know": The Use of Traditional Fixed and Mobile Telephony for Social Networking among Norwegian Parents. R&D Report 33/98. Kjeller, Norway, Telenor.

Ling, R. & Donner, J. 2009. *Mobile Communication.* Digital Media and Society Series. Polity Press.

Ling, R. & Haddon, L. 2001. Mobile Telephone, Mobility and the Coordination of Everyday Life. A Paper Presented at Machine That Becomes Us Conference. Rutgers University.

Ling, R. & P.E Pedersen. *Mobile Communication: Re-negotiation of the Social Sphere.* Springer-Verlag.

Ling, .R, & Yttri, B. 2002. Hyper-coordination via Mobile Phones in Norway. *In J.E. Katz, & M. Aakhus (eds). Perpetual Contact: Mobile Communication, Private Talk, Public Performance. Cambridge: Cambridge University press.* pp. 139-169.

Ling, R. & Yttri, B. 1999. "Nobody Sits at Home and Waits for the Telephone to Ring, Micro and Hyper-coordination Through the Use of the Mobile Telephone. Telenor.

Litondo, K. 2012. Mobile Phones and Employment among Informal Micro and Small Enterprises In Nairobi. In *Africa Case Book. Synergies in Africa Business and Management Practices,* Vol. 1. AJBUMA.

Lorente, S. 2002. Youth and Mobile Telephones: Something More Than a Fashion. *Revista De Estudios De Juventud. ITU.*

Lyon, F. 2003. "Trader Associations and Urban Food System in Ghana: Institutionalist Approaches to Understanding Urban Collective Action. *International Journal of Urban and Regional Research,* 27:11–23.

Lyons, M. & Snoxell, S. 2005. "Creating Urban Social Capital: Some Evidence from Informal Traders in Nairobi, *Urban Studies,* 42(7):1073-1092.

Madah, K.C. 1999. Girl Child Education in Tamale Municipality: Role of Moslem Women. An Unpublished Research Report to the University Of Education, Winneba, Department Of Home Economics Education.

Madden, G., and Coble-Neal, G. 2004. "Economic Determinants of Global Mobile Telephony Growth". *Information Economics and Policy* 16 (4): 519–34.

Madden, G., & Savage, S. 1998. "CEE Telecommunications Investment and Economic Growth". *Information Economics and Policy*, (10).

Mail & Guardian, 2012. African Mobile Markets on Exponential Growth Track. Business News, November 23-29.

Maloney, W.F. 2004. "Informality Revisited". *World Development,* 32(7): 1159-1178.

Marcus, G. E. 1995. Ethnography in/of the World System: The Emergence of Multi-Sited Ethnography". *Annual Review of Anthropology, 24:*95–117.

Maxwell, J.A. 2005. *Qualitative Research Design: An interactive Approach.* Applied Social Research Method Series. (2nd Edition) Vol. 42. Thousand Oaks CA: Sage.

Mazumdar, D. 1976. "The Urban Informal Sector". *World Development,* 4 (8):655-679.

Mbarika, V. W. 2002." Rethinking Information and Communications Technology Policy Focus on Internet versus Teledensity Diffusion for Africa's Least Developed Countries". *Electronic Journal on Information Systems in Developing Countries,* 9(1):1–13.

Mead, D.C & Leidholm, C. 1998. "The Dynamics of Micro and Small Enterprises in Developing Countries," *World Development,* (26):61-74.

Mead, D. & Morrisson, C. 1996. "The Informal Sector Elephant". *World Development,* 24 (10): 161 1-1619.

Mehta, K., Maretzki, A., & Semali, L. 2011. "Trust, Cell Phones, Social Networks and Agricultural Entrepreneurship in East Africa: A Dynamic Interdependence". *African Journal of food, Agriculture, Nutrition and Development (AJFAND) online,* 11(6): 5373-5388.

Melkote, D. R. & Steeves, H.L. 2004. Information and Communication Technologies for Rural Development , In C.Okigbo & F. Eribo, (eds). *Development and Communication in Africa.* Lanham, MD: Rowman & Littlefield. pp.165-173.

Mensah, O. 2006. Urban Spaces as Livelihood Asset for the Poor: Urban Planning Policies at Informal Street Trading in the Kumasi Metropolis. A Master of Science in Urban Development Planning Dissertation. Development Planning Unit, UCL, UK.

Meso, P., Mus, P., & Mbarika, V. 2005. "Towards a Model of Consumer Use of Mobile Information and Communication Technology in LDCs: The Case of Sub-Saharan Africa". *Information Systems Journal* 15: 119-146.

McMillan, J. 2002. *Reinventing the Bazaar: A Natural History of Markets* (1st Ed.). New York: Norton.

Modern Ghana News. 2010. Rlg Launches Made in Ghana Mobile Phones. [Graphic online] Available: http://www.modernghana.com/news/277957/1/rlg-launches-made-in-ghana-mobile-phones.html (2014, August 1).

Molony, T. 2009. "Carving a Niche: ICT Social Capital and Trust in the Shift from Personal to Impersonal Trading in Tanzania". *Information Technology for Development,* 15(4):283-301.

Molony, T. 2006. "I don't trust the phone; it always lies': Trust and Information and Communication Technologies in Tanzanian Micro and Small Enterprises," *Information Technologies and International Development,* (3): 67-83.

Morgan, G. & Smircich, L. 1980. The Case for Qualitative Research. *Academic Management. Review* 5, (4): 491-500.

Moser, C.O. 1978. "Informal Sector or Petty Commodity Production: Dualism or Dependence in Urban Development". *World Development,* 6(9/10):1041-1064.

Mossberger, K., Tolbert, C. J., & Stansbury, M. 2003. *Virtual Inequality: Beyond the Digital Divide*. Washington, DC: Georgetown University Press.

Munyua, A. W. & Mureithi, M. 2008. Harnessing the Power of the Cell Phone by Women Entrepreneurs: New Frontiers in the Gender Equation in Kenya. Grace Project Research Report: Kenya.

Muto, M. & Yamano, T. 2009. The Impact of Mobile Phone Coverage Expansion on Market Participation: Panel Data Evidence from Uganda. *World Development,* 37 (12): 1887-1896.

National Communication Authority (NCA), 2015. Tariffs of Mobile Telephone Operators (Prepaid) as at April 2014. Available: http://www.nca.org.gh/40/52/Network-Tariffs.html (2015, February 10).

National Communication Authority (NCA), 2014**a.** Mobile Voice Market Share for January 2014. [online] Available: http://www.nca.org.gh/40/105/Market-Share-Statistics.html (2014, March 25).

National Communication Authority (NCA), 2014**b.** Mobile Data Subscription for June 2014 [online] Available: http://www.nca.org.gh/73/34/News.html?item=384 (2014, August 30).

National Communication Authority (NCA), 2014**c.** Mobile Voice Market Share for June 2014 [online] Available: http://www.nca.org.gh/73/34/News.html?item=385 (2014 August 30).

National Communication Authority (NCA), 2014**d.** Mobile Voice Subscription figures for December 2014 [online] Available: www.nca.org.gh/download/mobile-voice-sub-dec-2014.pdf or www.nca.org.gh/73/74/news.html?..item=419. (2015, February 10).

National Communication Authority (NCA), 2014**e.** Mobile Data Subscription and Market Share figures for December 2014 [online] Available: www.nca.org.gh/73/74/news.html?..item=418. (2015, February 10).

National Communication Authority (NCA), 2014**f.** Mobile Phone Penetration rate as at December 2014 [online] Available: http://www.nca.org.gh/downloads/Telecom_Voice_Subscription_Dec_2014.pdf (2015, February 10).

National Communication Authority (NCA), 2009. Annual Report 2008. [online] Available: www.nca.org.gh/downloads/NCA-Annual-Report-2008.pdf (2012, May 27).

Nawaz, M. 2002. The Impact of Mobile Phone on Social Interaction.

Ngai, P. & Chan, J. 2012. "Global Capital, the State and Chinese Workers: The Foxconn Experience". *Modern China,* 38(4):383-410.

Ninsin, K. A. 1991. *The Informal Sector in Ghana's Political Economy.* Freedom Publication: Ghana.

Noor, K. B. M. 2008. "Case study: A Strategic Research Methodology". *American Journal of Applied sciences*, 5(11):1602-1604.

Norris, P. 2001. *Digital Divide, Civic Engagement, Information Poverty, and the Internet Worldwide*. Cambridge University Press: New York.

North American Women Association (NAWA) Ghana, 2013. Mobile phones- No worries Ghana. [online] Available: http://www.noworriesghana.com/sections/ghana-101/ghana-101-mobile-phones (2014, January 10).

Nyamekye, M., Koboré, N., Bonégo, E. R., Kiéma, E., Ndour, B. Jallo, S. & Tarawally, M. S. 2009. "Organizing Informal Sector Workers in West Africa: Focus on Women Workers, Trade Union Strategies: Case Studies from Ghana, Sierra Leone, Senegal and Burkina Faso" Accra, Ghana Trades Union Congress.

Nyarko, E. & Quartey, L. 2009. Liberalizing Ghana's Telecoms Sector: The Positives and the Negatives. PANOS West Africa Institute's LICOM Project.

Obeng –Odoom, F. 2011. "The Informal Sector in Ghana under Siege". *Journal of Developing Societies*, 27(3&4):355-392.

Ofori, E. G. 2009. Taxation of the Informal Sector in Ghana: a critical examination. A Commonwealth Executive Master of Business Administration (CEMBA) Dissertation submitted to The Institute of Distance Learning, Kwame Nkrumah University of Science and Technology, KNUST.

O'Neil, O. 2002. *A Question of Trust*. Cambridge: Cambridge University Press.

Osei-Boateng, C. & Ampratwum, E. 2011. The Informal Sector in Ghana. Ghana: Friedrich

Ebert Stiftung.

Osiakwan, E. M.K. 2003. "Ghana's Internet Industry" for West Africa Magazine Report; Monitoring the WSIS Targets a Mid-Term Review. ITU, Geneva.

Oteng- Ababio, M. 2012. Electronic Waste Management in Ghana. Issues and Practices [online] Available: http://cdn.intechopen.com/pdfs-wm/38097.pdf (2014, March 2).

Overå, R. 2008. Mobile Traders and Mobile Phones in Ghana. In J. Katz, (Ed.). *Handbook of Mobile Communication Studies.* Cambridge, MA: MIT Press.

Overå, R. 2007. "When Men Do Women's Work: Structural Adjustment, Unemployment and Changing Gender Relations in The Informal Economy of Accra". *Journal of Modern African Studies, 45*(4): 539-563.

Overå, R. 2006. "Networks, Distance, and Trust: Telecommunications Development and Changing Trading Practices in Ghana", *World Development*, (34):1301-1315.

Overå, R. 1998. Partners and Competitors: Gendered Entrepreneurship in Ghanaian Canoe Fisheries. A thesis submitted to Department of Geography, University of Bergen.

Owusu, G. & Lund, R. 2004. "Markets and Women's Trade: Exploring Their Role in District Development in Ghana". *Norsk Geografisk Tidsskrift - Norwegian Journal of Geography,* 58(3):113-124.

Padgett, D.K. 2008. *Qualitative Methods in Social Work Research.* Thousand Oaks, CA: Sage.

Palen, L., Salzman, M., & Youngs, .E. 2000. Going Wireless: Behaviour and Practice of New Mobile Phone Users. Proceeding on the ACM 2000. Conference on Computer Supported Cooperative Work (CSCW'00) Philadelphia, PA, 201-210.

Palmer, R. 2004. The Informal Economy in Sub-Saharan Africa: Unresolved Issues of Concept, Character and Measurement. Occasional Papers No. 98.

Patterson, R., & Wilson, E. 2000. "New IT and Social Inequality: Resetting the Research and Policy Agenda", *The Information Society,* (16): 77-86.

Peattie, L. 1987. "An Idea in Good Currency and How It Grew: The Informal Sector". *World Development,* 15(7):851-860.

Peil, M. 1977. *Consensus and Conflict in African Societies.* Hong Kong, Longman.

Pellow, D. 2008. *Landlords and Lodgers: Socio Spatial Organisation in an Accra Community*. University of Chicago Press.

Pfaff, J. 2010. "A Mobile Phone: Mobility, Materiality and Everyday Swahili Trading Practices". *Cultural Geographies*, 17(3): 341–357.

Pillow, W. 2003. Confession, Catharsis or Cure? Rethinking Uses of Reflexivity as Methodological Power in Qualitative Research. *Qualitative Studies in Education*, *16*(2):175–196.

Plant, S. 2000. On the Mobile: The Effects of Mobile Phone on Social and Individual life. Motorola.

Portes, A. 1983. The Informal Sector, Controversy and Relation to National Development. *Review* 7(1):151-174.

Portes, A., Castells, M. & L. Benton. 1989. *The Informal Economy. Studies in Advanced and Less Developed Countries*. Baltimore: The Johns Hopkins University Press.

Potts, D. 2007. The State and the Informal in Sub-Saharan Africa Urban Economies. Revisiting Debates on Dualism. Crisis States Working Paper Series, No.2. London School of Economics and Political Science London.

Prenksy, M. (2001). Digital Natives, Digital Immigrants. *On the Horizon, 9*(5), 1-6.

President of the Greater Accra Market Association, 2013. Personal Interview, 22 January, Makola Market, Accra.

Rashid, A.T. & Elder, L. 2009. "Mobile Phones and Development: An Analysis of IDRC-Supported Projects". *The Electronic Journal of Information systems in Developing Countries,* 36(20):1-16

Reid, D.J. & Reid, F.J.M. 2007. "Text or Talk? Social Anxiety, loneliness, and Divergent Preferences for Cell Phone Use". *Cyber psychology & Behaviour*, 10(3):424-435.

Rettie, R. 2008. "Mobile Phones as Network Capital: Facilitating Connections". *Mobilities,* 3(2):291-311.

Rheingold, H. 2002. *Smart Mobs: The Power of the Mobile Many. Smart Mobs: The Next Social Revolution*. Cambridge, MA: Perseus Books.

Riach, K. 2009. "Exploring Participant-Centred Reflexivity in the Research Interview". *Sociology*, *43*(2):356–370.

Richards, L. 2009 *Handling Qualitative data. A Practical Guide*. (2nd Edition). Sage: Thousand Oaks.

Rlg, 2014. About Rlg. [online] Available: http://www.rlgglobal.com/about-rlg.

Roberts, A. 2013. "Peripheral Accumulation of the World Economy: A Cross National Analysis of the Informal Economy". *International Journal of Comparative Sociology*, 54(5-6): 420-444.

Robertson, C. C. 1995. 'Comparative Advantage: Women in Trade in Accra, Ghana, and Nairobi, Kenya', In B. House-Midamba & F. K. Ekechi, (Eds)., *African Market Women and Economic Power: The Role Of Women In African Economic Development*. Westport, CT & London: Greenwood Press.

Robertson, C. C. 1984. "Formal or Non Formal Education? Entrepreneurial Women in Ghana". *Comparative Education Review,* 28(4):639-658.

Robertson, C. 1983. "The Death of Makola and Other Tragedies". *Canadian Journal of African Studies.* 17 (3): 469-495.

Robertson, C. 1974. "Economic Woman in Africa: Profit-making Techniques of Accra Market Woman". *The Journal of Modern African studies,* 12(4):654-664.

Robson, C. 1993. Real World Research: A Resource for Social Scientists and Practitioner Researchers.

Roldan, G. & Wong, A. 2008. *Building Micro-Enterprises Through Information and Communication Technologies (ICT) in Bangladesh.* Telektronikk 2.

Roos, J.P 1993. "Sociology of Cellular Telephone: The Nordic model". *Telecommunication Policy,* 17(6).

Rorty, R. 1991. Inquiry as Recontextualization: An Anti-Dualist Account of Interpretation. In R. D. Hiley, J. F. Bohman. & R. Shusterman (Eds), *The Interpretive Turn: Philosophy Science.* Cornell University Press Culture. pp. 59-80.

Ruggie, J.G. 1998. *Constructing the World Polity: Essays on International Institutionalisation*. London: Routledge.

Samuel, J. Shah, N. and Hadingham, W. 2005. "Mobile Communications in South Africa, Tanzania, and Egypt: Results From Community and Business Surveys," In Africa: The Impact of Mobile Phones. Moving the Debate Forward: *The Vodafone Policy Paper Series* (3):44-52.

Sanders, G., Thorens, L., Reisky, M., Rulik, O. & Deylitz, S. 2003. *GPRS Networks*. Chichester: John Wiley & Sons Ltd.

Sassen, S. 2001. The Excesses of Globalisation and the Feminisation of Survival. *Parallax*, 7(1):100-110.

Sassen, S. 1998. Globalisation and its Discontents: Essays on the Mobility of People and Money. New York: New Press.

Sassen, S. 1997. Informalization in Advanced Market Economies. Issues in Development. Discussion Paper 20. ILO.

Sassen, S. 1991. The Global City: New York, London, Tokyo. Princeton University Press.

Scharnhorst, W., Hilty. L. M., & Jolliet, O. 2006. "Life Cycle Assessment of Second Generation (2G) and Third Generation (3G) Mobile Phone Networks". *Environment International,* 32: 656–675.

Schneider, F. 2002. 'Size and Measurement of the Informal Economy in 110 Countries Around the World'; Paper Presented At Workshop of Australian National Tax centre, Canberra, Australia, July, 17.

Segbefia, A. Y. 2000. The Potentials of Telecommunications For Energy Savings In Transportation In Ghana: The Dynamics of Substituting Transport of Persons With Telecommunications in the Greater Accra Region. M.Phil Thesis: University of Ghana, Legon.

Seidman, I. 1998. *Interviewing as Qualitative Research. A Guide for Researchers in Education and the Social sciences*. (2nd Edition). Teachers College Press.

Sekhon, H., Ennew, C., Kharouf, H. & Devlin, J. 2014. "Trustworthiness and Trust: Influences and Implications". *Journal of Marketing Management*, 30(3-4): 409-430.

Sethuraman, S.V. 1998. Gender, Informality and Poverty. A Global Review. Background Paper for World Bank, World Bank Development Report 2000, Washington D.C.

Sethuraman, S. V. 1976. "The Urban Informal Sector: Concepts, Measurements and Policy". *International Labour Review,* 114(1).

Sethuraman, S. V. 1977. "The Urban Informal Sector in Africa" *International Labour Review,* 116(3).

Sey, A. 2011. "We use it different, different': Making Sense of Trends in Mobile Phone Use in Ghana". *New Media & Society,* 13(3): 375–390. Sage Publications.

Sherchan, W., Nepal, S., & Paris, C. 2013. A Survey of Trust in Social Networks. ACM Comput. Surv. 45, 4, Article 47.

Sife, A.S., Kiondo, E., & Lyimo-Macha, J.G. 2010." Contribution of Mobile Phones to Rural Livelihoods and Poverty Reduction in Morogoro Region, Tanzania". *The Electronic Journal of Information Systems in Developing Countries* (EJISDC) 42(3):1-15.

Silverman, D. 2006. *Interpreting Qualitative Data*. (3rd Edition). Sage Publication Ltd.

Simon, C. & Witte, A. 1982. *Beating the System: The Underground Economy*. Boston: Auburn.

Sindzingre, A. 2006. The Relevance of the Concepts of Formality and Informality: A Theoretical Appraisal. In B. Guha-Khasnobis, R. Kanbur & E. Ostrom (Eds); *The Formal And Informal Economy: Concepts And Policies*. UNU-WIDER Studies in Development Economics and EGDI: Oxford University Press.

Singh, P. S., Reynolds, R.G. & Muhammed, S. 2001. "A Gender Based Performance Analysis of Micro and Small Enterprises in Java, Indonesia". *Journal of Small Management*, 39(2):174-182.

Smart A. & Smart, J (eds.) Petty Capitalists and Globalization: Flexibility, Entrepreneurship and Economic Development. Albany: SUNY Press.

Smith, D. 2014. Cellphone Create a Technology Leapfrog. *Mail and Guardian*. [online] Available:http://mg.co.za/article/2014-06-12-cellphones-create-a-technology-leapfrog (2014, August 5).

Smith, J.A. 2008. *Qualitative Psychology. A Practical Guide to Research Methods*. (2nd Edition). Sage publications Ltd.

Smithies, E., 1984. *The Black Economy in England since 1914*, Gill and Macmillan; Dublin.

Smithies, E., 1984. *The Black Economy in England since 1914*, Gill and Macmillan; Dublin.

Snowden, C. 2000. Blinded by Text: Re-evaluating the Oral imperative in Communication. Paper Presented at Communications Research Forum 2000, Canberra, Australia.

Somekh, B. & Lewin, C. (Eds), 2011. *Theory and Methods in Social Research*. Sage Publications Inc.

Souter, D., Garforth, C., Jain, R., Mascarenhas, O., McKerney, K. & Scott, N. 2005. The Economic Impact of Telecommunications on Rural Livelihoods and Poverty Reduction: A Study of Rural Communities in India (Gujarat), Mozambique, and Tanzania. Commonwealth Telecommunications Organisation for UK Department for International Development.

Sparks, D.L. & Barnett, S. T. 2010. "The Informal Sector in Sub-Saharan Africa: Out of the Shadows to Foster Sustainable Employment and Equity?" *International Business & Economics Journal* 6(5):1-5.

Statista Report, 2015. [Online] Available: www.statistica.com (2015, March 29).

Steele, D. 1972. Hindrances to the Programme to Encourage the Rise of African Entrepreneurship in Kenya Resulting from the Theory of the Dual Economy. In *Developmental Trends in Kenya,* Studies, Centre of Mcan Studies, Edinburgh.

Steinmuellar, W.E. 2001. "ICTs and the Possibilities for Leapfrogging by Developing Countries". *International Labour Review,* 140(2).

Stiakakis, E., Kariotellis, P. & Vlachopoulou, M. 2010. From the Digital Divide to Digital Inequality: A Secondary Research in the European Union.

Strivastava, L. 2004. Social and Human Considerations for a Mobile World. International Telecommunication Union *Background Paper, Workshop on Shaping the Future Mobile Information Society,* 4-5 March Document SMIS/04.

Swaminathan, M. 1991. Understanding the "Informal Sector": A Survey. WIDER Working Paper.

Sztompka, P. 1999. *Trust. A Sociological Theory*. Cambridge University Press.

Teppeh, V. 2011. Impact of Mobile Telephony on Ghana's Economy. [myjoyonline] Available: http://www.business.myjoyonline.com/pages/news/201110/74316.php (2013, November, 5)

Terrel, K.D 1976. "A Review of The Urban Informal Business Sector On El-Salvador". A Paper Prepared for The World Bank, Urban and Regional Economics Division.

Tetteh, E. K. & Frempong, G.K. 2009. "Developing the Rural Economy of Ghana through Micro and Small Enterprises (Mses): Issues and Options". *African Technology and Development Forum Journal,* 5(3/4): 3-12.

The Guardian, 2014. Agbogbloshie: The World's Largest E-Waste Dump – In Pictures. [online] Available: http://www.theguardian.com/environment/gallery/2014/feb/27/agbogbloshie-worlds-largest-e-waste-dump-in-pictures.

The Statesman (2007, April 30). The Informal Sector in Ghana.

Thompson, C. 1999. "Qualitative Research into Nurse Decision Making: Factors for Consideration in Theoretical Sampling". *Qualitative Health Research,* 9(6): 815-828.

Tokman, V.E. 1978. "An Exploration into the Nature of the Informal- Formal Sector Relationships". *First World Development*, 6 (9/10):1065-1075).

Tondare, S.M., Panchal, S. D. & Kuschure, D.T. 2014. "Evolutionary Steps from 1G to 4.5G". *International Journal of Advanced Research in Computer Engineering* 3(4):6163-6166.

Townsend, A. M. 2000. "Life in the Real-Time City: Mobile Telephones and Urban Metabolism," *Journal of Urban Technology,* (7):85-104.

Trading Economics (n.d). Mobile Phone Subscriptions (per 100 people) in Ghana. [online] Available: http://www.tradingeconomics.com/ghana/mobile-cellular-subscriptions-per-100-people-wb-data.html on (2014, March 4).

Trager, L. 1987. "A Re-Examination of the Urban Informal Sector in West Africa". *Canadian Journal of Africa Studies* 21(2): 238-255.

United States National Forum on Information Literacy, (n.d). What is the NFIL? [online] Available: http://infolit.org/about-the-nfil/what-is-the-nfil/ (2014, September 5).

Uslaner, E.M. 2002. The Moral Foundations of Trust. Cambridge, UK: Cambridge University Press.

Van Dijk, J. 2006. The Network Society: Social Aspects of New Media. 2nd Edition. London: Sage.

Van Dijk, J. 2005. *The Deepening Divide. Inequality in the Information Society*. London: Sage.

Van Dijk, J. & Hacker, K. 2003. "The Digital Divide as a Complex and Dynamic Phenomenon". *Information Society* (19): 315–326.

Vodafone, 2005. Africa: The Impact of Mobile Phones. Moving the Debate Forward. The Vodafone Policy Paper Series. No. 2.

Wade, R. H. 2004. Bridging the Digital Divide: New Route to Development or New Form of Dependency. In C. Avgerou, C. Ciborra, & F. Land (eds). *The Social Study of Information and Communication Technology Innovation, Actors, and Contexts.* New York: Oxford University Press. pp. 184–206.

Waverman, L. Meschi, M. and Fuss M. 2005. "The Impact of Telecoms on Economic Growth in Developing Nations". Moving the Debate Forward: *The Vodafone Policy Paper Series 2007*(3):10-23.

Wilson, E.J. 2006. The Information Revolution and Developing Countries. MIT Press.

Wajcman, J., Bittman, M., Jones, P. , Johnstone, L. & Brown, J. 2007. Impact of the Mobile Phone on the Work/Life Balance. Preliminary Report AMTS/ARC Link Project.

Wallace, F. 2013. Mobile phone technology: A Transformative Technology for Business in Ghana. Kimmage Development Studies Centre (DSC).

Warschauer, M. 2003. *Technology and Social Inclusion: Rethinking the Digital Divide.* Cambridge, MA: MIT Press.

Wrigley-Asante, C. 2008. 'Men Are Poor but Women Are Poorer: Gendered Poverty and Survival Strategies in the Dangme West District of Ghana'. Norwegian Journal of Geography 62(3): 161-170.

Yankson, P.W.K.: 1992 *Employment in the Urban Informal Sector in Ghana.* ILO/JASPA, Addis Ababa.

Yin, R. K. 2009. *Case Study Research: Design and Methods*: (4th Edition), Sage Publications, California.

Yin, R. 1993. *Application of Case Study Research.* Sage Publication, California.

Yin, R. 1984. *Case Study Research: Design and Methods.* California: Sage.

Yu, D. 2012. "Defining and Measuring Informal Employment in South Africa". *Development Southern Africa,* 29(1).

Yu, P. R. (2011). An Investigation of the Interplay Between Mobile Communication, Network Ties, And Civic Engagement: Implications For Trust In Others. Department of Communication Studies, The University of Michigan.

Yussuf, O.S. 2011. "A Theoretical Analysis of the Concept of Informal Economy and Informality in Developing Cities". *European Journal of Social Science*, 20(4):624-636.

Zubieta J. G. 2010 Women, Development and the Knowledge Society in Latin America. Expert Group Meeting, Gender, Science and Technology EGM/ST/EP.1.

APPENDIX 1

List and Description of Participants

Respondent 1: (Textile trader); Makola market; interview conduct in Ga

Respondent 2: (Textile trader); Makola market; interview conduct in Ga

Respondent 3: (Textile trader); Makola market; interview conduct in Ga

Respondent 4: (Textile trader); Makola market; interview conduct in Ga

Respondent 5[215]: (Textile trader); Makola market; interview conduct in Ga

Respondent 6: (Textile trader); Makola market; interview conduct in Twi

Respondent 7: (Vegetable trader); Agbogbloshie Market; interview conducted in Twi

Respondent 8: (Vegetable trader); Agbogbloshie Market; interview conducted in Twi

Respondent 9: (Vegetable trader); Agbogbloshie Market; interview conducted in Ga

Respondent10: (Vegetable trader); Agbogbloshie Market; interview conducted in Twi

Respondent 11: (Vegetable trader); Agbogbloshie Market; interview conducted in Twi

Respondent 12: (Vegetable trader); Kaneshie Market; interview conducted in Ga

Respondent 13: (textile trader); Kaneshie Market; interview conducted in Ga

Respondent 14: (Textile trader); Kaneshie Market; interview conducted in Twi

Respondent 15: (Vegetable trader); Kaneshie Market; interview conducted in Ga

Respondent 16: (Vegetable trader); Kaneshie Market; interview conducted in Ga

Respondent 17: (Textile trader); Madina Market; interview conducted in English

Respondent 18: (Textile trader); Madina Market; interview conducted in English and Twi

Respondent 19: (Vegetable trader); Madina Market; interview conducted in Ga

Respondent 20: (Vegetable trader); Madina Market; interview conducted in Ga

[215] She is the president of the Greater Accra Market Association (with her office located in the Makola market). She is also the queen mother for the entire Makola market.

Respondent 21: (Textile trader); Madina Market; interview conducted in English and Ga

Respondent 22: (Textile trader); Makola market; interview conduct in Twi

Respondent 23: (Textile trader); Makola market; interview conduct in Ga

Respondent 24: (Textile trader); Makola market; interview conduct in English

Respondent 25: (Vegetable trader); Makola market; interview conduct in Ga

Respondent 26: (Vegetable trader); Makola market; interview conduct in Twi

Respondent 27: (Vegetable trader); Agbogbloshie Market; interview conducted in Ga

Respondent 28: (Vegetable trader); Agbogbloshie Market; interview conducted in Twi

Respondent 29: (Vegetable trader); Agbogbloshie Market; interview conducted in Ga

Respondent 30: (Vegetable trader); Agbogbloshie Market; interview conducted in Ga

Respondent 31: (Vegetable trader); Agbogbloshie Market; interview conducted in Twi

Respondent 32: (Vegetable trader); Agbogbloshie Market; interview conducted in Ga

Respondent 33: (Textile trader); Kaneshie Market; interview conducted in Ga

Respondent 34: (Textile trader); Kaneshie Market; interview conducted in Ga

Respondent 35: (Textile trader); Kaneshie Market; interview conducted in Ga

Respondent 36: (Vegetable trader); Kaneshie Market; interview conducted in Twi

Respondent 37: (Vegetable trader); Kaneshie Market; interview conducted in English

Respondent 38: (Vegetable trader); Kaneshie Market; interview conducted in Ga

Respondent 39: (Vegetable trader); Kaneshie Market; interview conducted in Ga

Respondent 40: (textile trader); Kaneshie Market; interview conducted in Ga

Respondent 41: (Textile trader); Madina Market; interview conducted in Twi

Respondent 42: (Textile trader); Madina Market; interview conducted in Twi

Respondent 43: (Textile trader); Madina Market; interview conducted in Twi

[216]Respondent 44: (Vegetable trader); Madina Market; interview conducted in Ga

Respondent 45: (Vegetable trader); Madina Market; interview conducted in Ga

Respondent 46: (Vegetable trader): Makola market; interview conduct in Ga

Respondent 47: (Vegetable trader); Makola market; interview conduct in Ga

Respondent 48: (Vegetable trader); Makola market; interview conduct in Ga

Respondent 49: (Vegetable trader); Makola market; interview conduct in Ga

Respondent 50: (Vegetable trader); Agbogbloshie Market; interview conducted in Twi

Respondent 51: (Vegetable trader); Agbogbloshie Market; interview conducted in Ga

Respondent 52: (Vegetable trader); Agbogbloshie Market; interview conducted in Ga

Respondent 53: (Vegetable trader); Agbogbloshie Market; interview conducted in Twi

Respondent 54: (Vegetable trader); Agbogbloshie Market; interview conducted in Twi

Respondent 55: (Vegetable trader); Agbogbloshie Market; interview conducted in Twi

[217]Respondent 56: (Vegetable trader); Agbogbloshie Market; interview conducted in Ga

Respondent 57: (Textile trader); Kaneshie Market; interview conducted in Ga

Respondent 58: (Vegetable trader); Kaneshie Market; interview conducted in Twi

Respondent 59: (Textile trader); Kaneshie Market; interview conducted in Ga

Respondent 60: (Textile trader); Kaneshie Market; interview conducted in Ga

Respondent 61: (Textile trader); Kaneshie Market; interview conducted in Ga

Respondent 62[218]: (Vegetable trader); Kaneshie Market; interview conducted in Ga

Respondent 63: (Vegetable trader); Kaneshie Market; interview conducted in Ga

Respondent 64: (Vegetable trader); Kaneshie Market; interview conducted in Twi

[216] She is the queen mother for the entire Madina market.
[217] She is the queen mother for the entire Agbogbloshie market.
[218] She is the queen mother for the entire Kaneshie market.

Respondent 65: (Vegetable trader); Kaneshie Market; interview conducted in Twi

Respondent 66: (Textile trader); Kaneshie Market; interview conducted in Ga

Respondent 67: (Vegetable trader); Madina Market; interview conducted in Ga

Respondent 68: (Vegetable trader); Madina Market; interview conducted in Ga

Respondent 69: (Textile trader); Madina Market; interview conducted in English

Respondent 70: (Textile trader); Madina Market; interview conducted in English

Respondent 71: (Vegetable trader); Madina Market; interview conducted in Twi

Respondent 72: (Textile trader); Madina Market; interview conducted in Twi

APPENDIX 2

Mobile Phone Size Images From 1G to 5G

Source: http://www.youthdomain.com/features-of-5g/

Mobile Phone Size Images From 1G to 4G

Source: http://thegrkoirala.blogspot.com/2012/09/key-features-of-1g-2g-3g-and-4g.html

APPENDIX 3

Images of Interviewed Women Traders' Mobile Phone Generations (2G, 2.5 and 3G)

Sample 1: 2G mobile phones found among women traders in Accra

Sample 2: 2G mobile phones owned by women traders

Samples 3: 2G mobile phones found among women traders in Accra

Samples of Mobile phones between and a 2G and a 2.5G found among women traders in Accra

Samples of 3G mobile phones owned by women traders in the study

APPENDIX 4

Letter from the President of Greater Accra Market Women Association After field work in the markets

GREATER ACCRA MARKETS ASSOCIATION

P. O Box 31 MD
Makola - Accra

Tel: 0302-244667
0208-126540

25th August, 2014

Graduate School Office
Arts and Social Sciences Faculty
Private Bag X1
Matieland 7602
South Africa

LETTER OF CONFIRMATION

I the President of the Greater Accra Market Association confirms that Yvette Usher did interviewed me and the various Markets (Makola, Kaneshie Agbogbloshie, and Madina Markets) on her research project which was successfully conducted in five months between January 2013 – May, 2013.

Yvette interviewed us on the topic: *perceptions of the economic and social effects of mobile phone usage among women traders in Accra* which she got many different views from I the president and the Markets as well.

I highly commend her good working attitude that she portrays during her research.

Mercy Afrowa Needjan
President
(Greater Accra Markets Association)

Greater Accra Markets A:
P. O. Box 31
Makola—Accra
Tel: 0208126540