DOMESTICATION OF THE MOBILE PHONE AMONGST KANTAMANTO USED-CLOTHES TRADERS IN ACCRA

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DECLARATION

I hereby declare that, this thesis is the result of my own research work, carried out in the Department of Sociology, University of Ghana, under the supervision of Dr. Dan-Bright Dzorgbo and Dr. Akosua K. Darkwah. All references cited in this work have been duly acknowledged. However, all errors found in this work are solely mine.

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DEDICATION

This thesis is dedicated to my son Nana Fosu Kwabena Ayeyi Asante who was born during the completion stages of this thesis and my wife Maameefua Asante. During my darkest hour God revealed Himself through you.

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ABSTRACT

The mobile phone technology only recently gained its ubiquitous status and rapidity in design and features. The African context is no exception to this, as a result, it is only in the last decade that people have had the opportunity to own and discard various mobile phone handsets. Most studies have not considered the social dimension of the "journey" of owning and discarding the mobile phone handset. Consequently, the study explored the entire process involved in the traders accessing and making the mobile phone an extension of themselves from the point of owning the technology to the point of deciding to dispose of it. The process was explored using both the innovators and domestication process frameworks at five different, but interwoven levels, including, uptake, appropriation, objectification, incorporation and conversion. The sequential-mixed-method (qualitative-before-quantitative) with a sample of 431 used-clothes traders was employed. The respondents were selected using the purposive, snowball and cluster sampling methods from the Kantamanto market in Accra. After obtaining data using the in-depth interview and observational approaches from 11 traders, face-to-face interviews were conducted using the survey approach for 420 respondents with 86% response rate (363). Relying on the innovators and domestication process frameworks to explore this process, the findings of the study revealed that the uptake of the mobile phone is fuelled by two broad factors: the mandatory factors and the design based factors. While the mandatory factors are the domain of women; older users and those with low education; men, younger users and those with high education dominate the design factors. This showed that innovators are not always the ones who have used the mobile phone the longest. Men and young users, who are often driven to own, use and change mobile phone handsets more by their preference for improved features than the mere replacement of a broken handset, often dominate the innovators. Additionally, the call feature of

the mobile phone is now a taken for granted basis for owning a handset amongst the traders. The study further revealed that the appropriation of the mobile phone handset is fueled by self-purchase for males and older owners, and gift for females and younger owners. Additionally, males within the traders' family circle and mobile phone repairers located at the market also significantly influence the traders in their mobile phone decisions. Conspicuously missing from this were advertisers and marketers. The study further revealed that objectification means more than just the physical display of the handset to score social status points, it also includes display of specific usage such as display of ringtones, social media uses and fashion. Objectification is interwoven with the earlier stages of the domestication process. Incorporation showed that three major routines of the traders drive their usage patterns and the continual usage of a handset, these include business, family responsibilities and entertainment routines. However, business usage was the most dominant pattern across all socio-demographic characteristics with no significant difference. Features and functions of the mobile phone that do not find a place in the traders' routines are abandoned. The incorporation stage is interwoven with the earlier stages of the domestication process. The final stage is the conversion stage; the study established that three key variables mediate the traders' attachment to their handset as expressed by themselves and seen by members of their social group. These are the age of the handset owner, the influence of others in managing the handset and finally the control the trader has over the mobile phone operation. The domestication process is not a linear process, but the stages overlap cyclically. Finally, the study showed that depending on a trader's age, gender and educational level, the traders take different paths in domesticating the mobile phone either as a gadget or as a communication device, even though they all belong to the same trading context.

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CHAPTER ONE

INTRODUCTION

1.1 Background of study

The information age will not have been a defining era without the help of its accompanying tools and gadgets that were generally accessible for domestic usage. Popular among such technologies are the good old telephone, radio, television, computers, internet, mobile phones, more recently the smart phones, and their accompanying accessories. These accessories and tools have collectively been referred to as Information Communication Technologies (Quan-Haase, 2013). Because of their enduring presence in our society today, it is the purpose of this study to increase our understanding of the interaction that exists between ICTs and society with emphasis on the most widely distributed ICT tool, the mobile phone and examine how the technology gets domesticated in a non-Western context like Ghana.

Between 2005 and 2011, global access to the mobile phone increased at double digit rates. Currently, the data from the International Telecommunications Union (ITU) published in 2012 shows that close to 85 out of every 100 inhabitants own a mobile phone handset in the world. Before 2001, the telephone was the most widely distributed communication gadget with records showing 20 out of every hundred inhabitants owning a telephone (ITU, 2004; ITU 2012). Today, people cannot step out of their residence without carrying their mobile phone handset. This shows that the mobile phone have become an extension of ourselves. It is no wonder then that mobile phone access is currently about four times more than that of the telephone.

However, a closer look at the data shows a disparity in global access. While access in the developed world is at saturation point with an annual increase of 7% and a penetration rate of over 122 per cent (ITU, 2012) that of the developing world is still increasing at higher rates with signs of slowing down slightly in 2011. For instance while the developed world added 7million new subscribers to 1.404billion subscribers from 2010 to 1.411billion in 2011 representing a penetration rate change of 0.2%, the developing world added 566million new subscribers to 3.887billion subscribers from 2010 to 4.453billion subscribers in 2011 also representing a penetration rate change of 8.9%. By the end of 2011, mobile phone penetration increased by 7.2 per cent worldwide, compared to 8.9 per cent in developing countries. Although at the end of 2013 the growth across all regions began slowing down, developing countries were still recording higher rates with a penetration rate change of 5.5% as compared to 3.2% for developed countries and 5% worldwide.

This shows that while the penetration rate for the rest of the world is stagnating, that of the developing world is increasing. ITU (2012) records further confirm that Sub-Saharan Africa has also had its fair share of this increase in penetration rates. In 2006, only 19 of every 100 inhabitants had a mobile phone. This figure had more than doubled five years later with 60 out of every 100 inhabitants owning a mobile phone. Although other regions in the world have already gone past the 100 inhabitants' subscription rate, Sub-Saharan Africa countries are yet to reach the saturation point. Despite this, many countries in the region hit the 80 to 85 per every 100 inhabitant subscription mark by the end of 2011.

It is evident that mobile phones are undoubtedly the single most widely distributed personal communication device in the world today. Considering its ubiquitous nature, it has inspired a

new generation of multidisciplinary studies in the social sciences. One such strand is the need to understand how different social groups domesticate the mobile phone.

1.2 Problem Statement

In 2012, I had a conversation with a colleague concerning her eight year old daughter who had come into contact with a polyphonic mobile phone handset for the first time in her life. The first thing her daughter did was to attempt to swipe the screen by clicking the screen space of the handset. After repeated attempts failed in achieving her aim to swipe, she visibly became frustrated and immediately dropped the mobile phone handset and complained to her mother that this is not a mobile phone and asked: how did you manage to communicate using this?

My colleague's daughter was raised in the UK where she grew up playing with smart phones and tablets and was constantly exposed to media programmes that featured the use of such gadgets. As such, her understanding of a mobile phone handset is the looks and functions of a smart phone. This shows clearly that the little girl had only domesticated one mode of handset, the smart phone. Her inability to make a polyphonic handset adaptable to her needs forced her to reject it. This story brings to mind the rampant changes that the telecommunication industry keeps experiencing as well as the functions and the form of usage consumers and society put it. A key question that arises out of this is “what can we learn from the biographies of technological gadgets” especially, that of telecommunication gadgets which change almost quarterly. To understand the biographies of technology is to understand how technologies get domesticated.

However, this question has received little attention within the context of developing nations. In developed nations, most of the researches on domestication and technology have focused on how household technologies are domesticated within the context of the household. Only a few of such

studies considered how technological gadgets that fit into multiple, parallel and contradictory social spaces get domesticated.

Additionally, most of the studies done in the developed world discuss the impact of the mobile phone on the basis of age, gender and other socio-economic factors (Castells, Fernandez-Ardevol, Qiu, & Sey, 2007; Geser, 2006; Castells, Fernandez-Ardevol, Qiu, & Sey., 2004; Geser, 2004; Crabtree, Nathan, & Roberts, 2003; Ling and Haddon, 2001; Bautsch,,Granger, Ward, Khan, Leveston, Niehus, & Karnjate,, 2001; Eldridge and Grinter, 2001) with the majority of these studies focusing on the dominant user group, the youth. A scholarly emphasis on the marginalized group of users such as adult and older users and users in the informal work environment is a more recent phenomenon.

Within the Sub-Saharan African context, the research focus has been teasing out the diverse ways in which mobile phone use is defining the social life of members of the region. The majority of these studies on Africa focus on the economic and developmental impact of the mobile phone thereby contributing little understanding of how the mobile phone is domesticated by individuals of different ages and gender categories (Sey, 2011; Asante, 2011; Castells et al., 2007; Overa, 2006; Ramirez, 2005, Sen, 1999).

Another strand of research focuses on traditional market centres and how the mobile phone's immersion in those contexts is shaping market relations. The literature on the mobile phone and market relations across Africa espouses that the mobile phone plays a facilitatory role in agricultural trading. Key among this is the support it provides farmers and buyers in obtaining information relating to demand and enhancing buyers' ability to manage supply and further

improve the exchange of price information (Asante, 2011; Aker & Mbiti, 2010; Overa, 2006; Molony, 2006).

Furthermore, the presence of the mobile phone at the market reduces significantly the amount of time and money traders spend on travelling to either keep track of stocks in transit or deliver short messages to farmers or vice versa (Sey, 2011; Asante, 2011; Jagun et al., 2007; Overa, 2006; Aker & Mbiti, 2010). Missing in these strands of research is how traders domesticate mobile phone technology. This shows that various studies on the mobile phone tend to focus on what people use the technology for while others also consider how it has been adopted by one specific social group as against other groups.

Only a few consider the "biographies" of these technologies from the time they were first owned by their current owner to the time these owners finally decided to discard them or pass them on to new users. One cannot begrudge researchers because the technology only recently gained its ubiquitous nature, especially in the African context. In addition, it is only in the last decade, especially in Africa that people have had the opportunity to own and discard various mobile phone handsets. As a result, most studies have not considered the social dimensions of the "journey" of owning and discarding the technological device. This thesis seeks to address this lacuna in the literature by exploring the entire process involved in accessing and making the mobile phone an extension of the owner, from the point of owning the technology to the point of deciding to dispose of it. It relies heavily on the domestication process as explained by Silverstone et al. (1992, 1994 and 1996) which concedes that the process in domesticating any technology begins with appropriation, objectification, incorporation and finally conversion. This process takes us beyond the mere uptake of a technology; but to have a full picture of the entire

stretch of the biography of the mobile phone it is imperative to begin from the process involved with the uptake of the mobile phone technology. Consequently, the specific objectives of the study are out lined as:

1.3 Specific Objectives

- To explore the factors that influence the uptake of mobile phone technology among traders
- To describe the mobile phone appropriation process among traders
- To examine the form of mobile phone incorporation
- To establish the conversion practices that traders engage in
- To examine the relationship between the biographies of mobile phone ownership and the socio-demographic characteristics of the traders

1.4 Significance of the study

It is increasingly becoming unthinkable for any human being to leave his or her dwelling please without carrying a mobile phone handset. It is also very unlikely to find people in a social gathering without a sizeable proportion being overly engrossed in taking unannounced glances at their mobile phone handset. The rampant changes we observe in the global design and manufacturing of such gadgets presupposes that there are some aspects of the mobile phone's usage that is not static. Close to a decade ago, SMS was the most widely used function among younger users of the mobile phone. Today, due to the increasing presence of smartphones on the market as well as infrastructural changes in mobile internet, people are now relying more on social media platforms than the traditional SMS. This has opened up varied angles of usage for people. Studies in Africa have not considered how such changes in the mobile phone handset design and functions are affecting the use of the technology and for what purpose among

different groups of people. This study will enhance our understanding of how mobile phones are domesticated among traders in the informal economies.

1.5 Definition of Concepts

Domestication as a concept evokes a picture akin to the history of agriculture and the development of human habitats such as the city, especially, the vision of man taming wild animals to enable them live with or near man's habitat. A similar technique used to tame plants laid the foundation for the emergence of Agriculture. In its basic form, domestication refers to the taming of a wild animal. Berker et al. (2006) observe that anytime users are confronted with new technologies, a semblance of the domestication of the wild can be observed irrespective of their environments. Scholars such as Silverstone, Hirsch and Morley (1994) as well as Silverstone and Haddon (1996) share this view. This process begins with the 'strange' and 'wild' technologies being integrated into the structures, daily routines and values of users and their environments, a phenomenon they called 'house-trained', confirming the prominence given the household. Silverstone et al. explain that this process spans across four key stages. It begins with the technology being acquired by the individual based on the perceived benefits the individual expects from owning the technology, a perception that is largely influenced by designers, marketers and advertisers. This is what they referred to as *appropriation*. The individual then goes to the *objectification* stage, where the item is displayed in such a way that it accrues certain response from onlookers and it is also fitted into the aesthetic nature of its environment. Following this is the *incorporation* stage, the stage of usage defined by the routines of the individual. The final stage of the taming process of the technology is the *conversion* stage where the individual gets to share with others what the technology means to him/her through the daily exhibition of the relationship that exists between the individual and the technology. The

onlookers also get to interpret that relationship in their own way. The majority of the studies relying on this framework have focused on the domestic environment, especially the household. It will be interesting to see how this framework operates in other social contexts with a non-domestic technology in a strictly non-domestic environment. These stages in the domestication process are further examined in subsequent chapters.

1.6 Organization of the study

The thesis is organized based on the domestication process to ascertain how the traders domesticate the mobile phone technology. Following this, the thesis is organized as follows:

Chapter 1: Background to the study: this chapter makes a case for the study by focusing on why it is necessary to understand how traders domesticate the mobile phone. It continues by showing the main issues that the thesis aims at achieving. It concludes by giving an overview of the entire thesis.

Chapter 2: Research Methods: the research methods section of the thesis is devoted to explaining the processes involved in obtaining the data needed for the thesis. It begins by examining the research method employed and how it was applied during the fieldwork. It also discusses the various tools employed in collecting the study data. The chapter ends with a discussion of the data analysis employed in the study as well as the background representation of the respondents of the study.

Chapter 3: Literature Review: the literature review chapter is devoted to addressing the various empirical and theoretical research works available on the mobile phone. It highlights the various studies on usage and adoption of the mobile phone both in Western and Non-Western

countries. It continues to address the domestication framework using the various theoretical and empirical studies.

Chapter 4: Ghana's telephony story: the literature review continues into chapter 4 where emphasis is placed on showing the history of Ghana's telephony. Tracing its origins preceding the colonial era to the present, thereby providing the context for the study.

Chapter 5: Uptake and Appropriation: this chapter is devoted to the ways in which the mobile phone enters the life of the traders. It also examines how age, gender and education mediates this process. The chapter ends by exploring how the traders' age, gender, education and the trading environment contextualize the appropriation of the mobile phone.

Chapter 6: Objectification in Incorporation: We display and use it differently from before- this chapter focuses on showing how display is both a function of appropriation and incorporation. It begins by showing the form display modes exhibited by the traders and how that is defined by their background as wells as conditions at the market. It continues by showing how objectification finds expression in usage. It ends by evaluating the various uses to which the traders put their mobile phone.

Chapter 7: Conversion of the Mobile Phone: this chapter explores the images of the traders' relationship with their handsets and how that is translated by others and themselves. It begins by identifying the key ways that the traders convert their mobile phone based on their relationship with their phones in the form of attachment. It ends by establishing how age, gender, and education mediate their attachment to the mobile phone.

Chapter 8: Paths of Domestication: Summary, Conclusions and Recommendations: this chapter ends by summarising the findings of the study to bring all the thoughts in the thesis together to show the various paths for domesticating the mobile phone amongst the traders on the bases of age, gender and level of education. The chapter finally ends with some recommendations.

In conclusion, although various studies on the mobile phone exist, most of them address how different social groups use it. Others also consider the economic and developmental impact of this technology. However, most of these studies do not consider how the changing face of mobile phone technological designs and improved infrastructure affects the nature of usage patterns and the ways in which people adopt these technologies in the context of their socio-cultural milieu. In order to throw more light on this the next chapter is devoted to exploring the various empirical and theoretical works on how technology is domesticated, with a key focus on the mobile phone.

CHAPTER TWO

RESEARCH METHODS

2.1 Introduction

The core problem for this thesis is to explore the entire process involved in accessing and making the mobile phone an extension of ourselves. However, in order to address this there was the need to identify the best methodological approach for exploring this process. The research method that enables one to observe processes especially, the ones that are shaped by the social context of the phenomenon is the qualitative method. Mobile phones are not just mere gadgets living on their own, they are imputed with social and cultural realities which can only be made visible if one digs deeper beyond what meets the eye to unravel the latent socio-cultural web or relationships that engulfs the gadget, within the social environment. Due to this, the qualitative design was employed. However, because this study also wanted to explore further to establish how widely applicable this process is to the general population of used-clothes traders the cross-sectional design was also employed. Consequently, the qualitative-before-quantitative mixed methods approach was employed in this study. This section therefore focuses on addressing the research method necessary for exploring this process. Thus, the chapter is devoted to examining in detail the methodological approach employed. The first part of this discussion considers the various debates concerning the approaches to social research. It continues to focus on the version of mixed-methods used in this study starting from the field selection, selecting participants for the study, data collection, preparation of the instruments for data collection, the qualitative design and to the cross-sectional designs for the study. Additionally, the treatment of the qualitative and quantitative data obtained and finally the validity and reliability concerns for the data.

2.2 Approaches to social research

There exist three broad approaches to social research: quantitative, qualitative and mixed methods. From the early fathers of sociology an attempt was made to ensure that sociological studies would focus on employing the tools and approaches of the physical and natural scientist, an approach that was tagged as positivism. This philosophical ideology, which equated the actions of human beings in groups to that of atoms, formed the ideological basis for what is now known in the circles of social research as quantitative methods. However, this approach was heavily criticised by other sociologists such as Alfred Schutz, Edmund Husserl and Max Horkheimer for assuming that all human social actions are predictive, static, structured and consistent with certain universal principles. This group leaned heavily towards another branch of philosophical ideal, phenomenology, which gave birth to interpretive sociology, the source of what is currently known as qualitative research. Considering that not all human social action is static, structured but a combination of both predictive and undefined patterns, a third strand of the methodological approach, the mixed methods approach was developed. Consequently, studies that have both static and non-static social patterns rely heavily on the mixed methods approach. This approach is complementary in nature as it enables the researcher to reduce the errors with reliability and validity that arises as a result of using solely quantitative or qualitative approaches to research.

Because the mixed method approach is a combination of qualitative and quantitative approaches, one needs to be mindful of how best to combine these two approaches to achieve the best results. There are three key ways for practically employing these techniques. These are quali-before-quanti, quanti-before quali and finally concurrent quantitative qualitative. It is imperative to place the development of mixed methods into recent history. As the third major branch of

research approach, though a novice, its history can be traced to the late 1950s and 60s. Although its actual coining dates back to the late 80s, glimpses of it started showing up in the 50s as the works of sociologists and cultural anthropologist of the time such as Gans, (1963) and Lynd & Lynd (1959) seems to show. However, any real attempts to formalize the mixed methods approach began with the works of Campbell and Fish (1959) who considered it as "multiple operationalism" the basis for the idea of triangulation. In its application, this concept deals with combining both quantitative and qualitative techniques in the problem formulation stage of the research process and not the entire research process.

Webb, Campbell, Schwartz, and Sechrest, (1966) were the first to have used triangulation as a concept. They defined it as the act of combining two independent measurement processes. This measurement process can be in two forms, across and within triangulation. In 1978, Denzin (1978) took triangulation a step further by not only identifying it as the "combination of methodologies in the study of the same phenomenon" (pg 291) but showed how to triangulate methods. He added that there are four types of triangulation; data triangulation, investigator triangulation, theory, and methodological triangulations. In distinguishing within-methods triangulation from between methods triangulation, Denzin (1978) identified that, *within-methods* triangulation refers to the use of either multiple quantitative or multiple qualitative approaches, while *between-methods* triangulation, dictates the use of both quantitative and qualitative approaches, the approach that qualifies as mixed-methods. Through mixed methods, researchers can be more confident of their results, integrate theories, inspire creative ways of obtaining data that is richer and thicker and even discover contradictions (Jick, 1979). The advantages outlined above served as the premise for the choice of the mixed methods approach for this study.

Consequently, two main research designs were employed in this research, namely: qualitative and cross-sectional designs.

2.3 Research Design

This study used a combination of the qualitative study design and the cross sectional design to obtain data from the used-clothes traders who own mobile phones and are active subscribers to any particular mobile phone network within the Kantamanto market enclave.

2.3.1 Qualitative Design

The qualitative design was employed from two angles. First, an inductive and explorative approach followed by a deductive theory testing approach. The leading purpose for employing the inductive explorative approach was to identify the theoretical boundaries, the data gathering protocols and tools for the remainder of the study. This design was employed due to the fact that it has been identified to be more appropriate for explorative studies and is also instrumental for the building of theory as well as the development of both qualitative and quantitative instruments (Baker, 1999). It is in view of this that Yin (2003) identifies case study design as an empirical inquiry that investigates contemporary phenomenon within its real life context especially when the boundaries between phenomenon and context are not clearly evident (Yin, 2003:13). Babbie (2013) corroborated this by calling it an in-depth examination of a single instance of some social phenomenon... (2013:338). Consequently, qualitative design was the first research design to be employed.

2.3.2 Study Area

In starting with this design, the first issue considered was the selection of the site and units of analysis for the study. Since this study invariably focused on how demographic differences

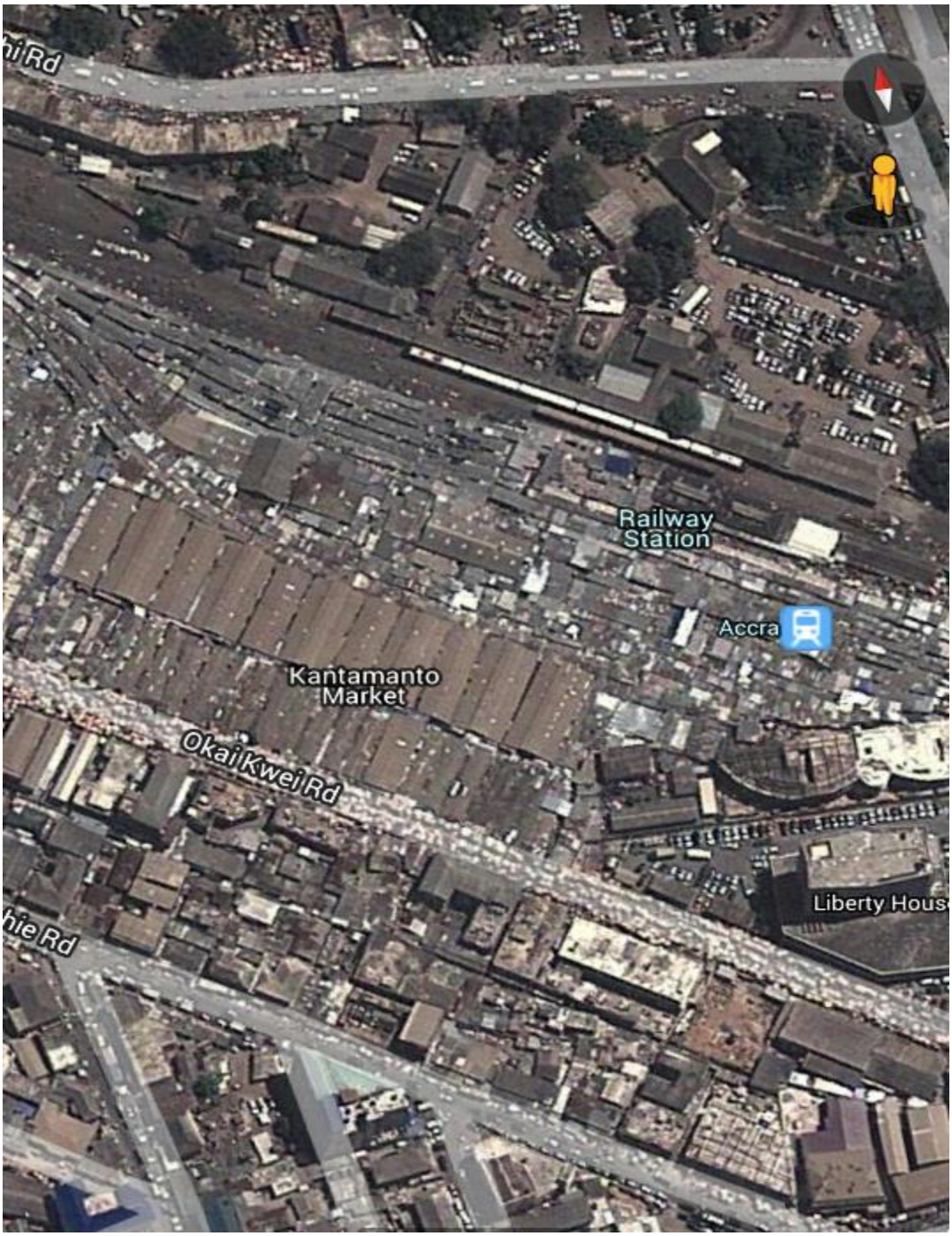
mediate the domestication process of mobile phones among used clothing traders there was the need to select the market centre that all demographic groups engaged in the same set of goods in large quantities. The explorative aspect to the field, therefore, began with the Tema Community 1 market. This market was selected because it was five minutes away from the national harbour of Ghana, the Tema harbour. Its proximity to the harbour made it a likelier location for importers of used-clothing. Upon several visits to the market, it was observed that only a handful of traders engaged in the used clothing industry. These traders were all approached to be made aware of the study and to obtain their informed consent. This was done after mapping out the market for a week. After the respective traders agreed to participate in the study they were briefed on the essence of the research and were allowed to opt out if they felt uncomfortable at any point during the observation and interviewing process. After three weeks of observation, 5 in-depth interviews each lasting an average of 3 hours were conducted. .

The interviews and observations showed that there were other markets that had used clothing centres, however, only one – the Kantamanto Market - was noted as the hub for all used clothing trading activities especially when the Tema traders also go for their stocks from that particular market despite their closeness to the Tema Harbour. Following this revelation, the Kantamanto market was selected as the next site to visit.

The Kantamanto market is located in the western part of Accra central business district. It stretches from the Okai Kwei road to the Accra railway station (see Figure 1). The market has several traders dealing in different items. While some traders deal in household hardware such as building materials like tiles, paints, doors and door locks others were also into the sale of household electrical items. Others were also into body ornaments like bags, clothes, belts jewels,

watches and shoes. However, the market Kantamanto is akin to used clothes among most Ghanaians, especially, those in Accra. This is largely because a sizeable proportion of traders at Kantamanto were into the sale of used clothes and to some extent used footwear. However, the clothes traders were more dominant.

Figure 1: Aerial view of Kantamanto location



Source: Google Earth, 2013

From 15th January 2013 to 1st March 2013, the length and breadth of the market was covered in order to gain a much deeper understanding of the market structure and organization. During that period, it was observed that just like any other traditional market, people who traded in similar goods often congregated at one place forming a mini market system. Like most market centres in Accra, business starts as early as 3am, especially on the market days with some variation depending on the category of the used-clothes trader. In the context of the used-clothes traders there are three categories of traders involved. This is constituted by importers, retailers with stalls and hawkers.

In tracing the value chain of the used-clothes it was found out that the importers warehouse is the first point of call for other traders, especially the retailers with stalls. These importers have a rich network of partners, mostly, family members and friends living in Western Europe, North America and China. These existing networks in the diaspora liaise with the importers in Ghana and ship these clothes packaged in the form bales to Ghana through the Tema port. Once the goods are cleared from the port by the importers, they send notifications out to their customers informing them of their arrival. Their distribution network goes beyond the borders of the Kantamanto market as it serves all markets, boutiques and shops in and out of Accra.

On every Monday and Thursday, the importers sites are overcrowded with long cargo vehicles loading a minimum of 200 pieces of 50 to 70 kilogram bale to be transported to other markets in other regions in Ghana and other West African countries. Weaving their way through these parks were the traditional push-trucks and head potters getting ready to move their purchase of stocks to the retailers market. Within the borders of Ghana, these trucks cart these goods to the major market centres in Ghana such as the Kumasi central market, and the Tamale central market.

These goods are also transported to other countries in West Africa, especially, Togo, Nigeria, Ivory Coast, and Burkina Faso. The restocking of the importers warehouse varies from once every two weeks to once every three months.

The importers' are largely located within permanent structures on the periphery of the main Kantamanto retailers market. The Kantamanto retailers market is the heartbeat of the used-clothes traders as it serves as the centre for the redistribution of the stock obtained from the importers. In the retailers market, there are two categories of retailers: hawkers, and retailers with stalls. Within the category of retailers with stalls, the market is further divided into sections such as the winter clothes, jeans and khaki, sports' wear, children's and babies' wear, curtains and trousers, ladies' and men's undergarments markets in addition to the unsorted items section. As a typical traditional retail market, its market days were Wednesdays and Saturdays.

There are a number of retailers involved in the value chain of the used clothes traders. The first retailer who gets the bale of used clothes from the importer at 4am sells each item in the bale unsorted at GH₵1 (as at August, 2013). This same item was re-purchased several times by other retailers until the final consumer purchases it from the final retailer (hawker) at GH₵10. Some shop owners from other parts of Accra rely on this value chain for restocking their shops. Owners of these shops buy from either the first or second retailer in the value chain. They often avoid buying from the importers because the content of some of the bales may not be of much value for their business. As a result, once the first retailer takes the risk to acquire the bale, the shop owners then take their time to select the items they want. The Kantamanto used clothes market was suitable for this study because unlike other minimarket centres its population has different demographic characteristics and has a unique cultural context for an informal sector.

Additionally, this study also sought to expand the domestication perspective beyond the household environment to include the informal sector. Once the suitability of the Kantamanto site was confirmed, the leaders of the two main associations (Kantamanto Importers and Retailers Associations) were contacted and briefed about the study and approval was obtained from them for the study to be undertaken at that site.

2.3.3 Challenges encountered during in the field work

After two months in the field, the fieldwork moved to the next stage, which was to purposively select and approach a number of importers, retailers with stalls, and hawkers beginning with the importers. A number of them were approached to secure an interview date as well as an opportunity to observe their mobile phone using activities during the week. However, after repeated visits to 20 shops, the majority of the importers refused to participate in the study citing various reasons with the most prominent one being the disputed national election results for the 2012 presidential and parliamentary elections of the country. In the weeks leading up to the registration of electorates to participate in the elections, there were a number of confrontations, which occasionally turned violent between the traders at the market and the indigenes of the "Odododiodio" constituency, a situation that contributed to deep seated perceptions about the then NDC government intentionally causing fear and panic so as to prevent the traders from registering and possibly voting for the leading opposition party at the time. This continued until the final day of the elections in December 2012. Once the results were announced, and the sitting government was adjudged to be the winner, the leading opposition party publicly denounced the results as valid. Subsequently, the traders feared the possible victimization by the government and their supporters as they were noted to have publicly supported the leading opposition party to seek redress from the supreme court of the country. This posed a great challenge for the

fieldwork as almost all the traders contacted either refused to participate in the study or were convinced by others not to participate for fear that the study will be used for political purposes.

This mistrust was managed with the assistance of some of the executive members of the traders' association. By the end of April, when a few interviews had been conducted with no reprisals, a number of the traders both retailers and hawkers alike began warming up to the researcher. Unfortunately, the slow progress of the fieldwork was further stalled when fire gutted about 90% of the retailers market on 5th May 2013, an event that affected goods worth billions of Ghana cedis affecting both importers and retailers alike. Shortly thereafter, progression of the fieldwork was put in doubt in multiple ways. Traders who had agreed to participate in the study could not be located and those who were located were not in the right frame of mind to continue with the research.

When the market was recomposed at the end of August 2013, the fieldwork resumed in earnest. By the middle of September, 11 in-depth interviews with 6 importers and 5 retailers had been conducted. These 11 interviews and observations helped sharpened the interview schedule instrument as well as the field strategy to employ for the conduction of the survey. For instance, while the observations helped in the mapping of the study site and deepening my understanding of the market context and the socio-cultural context within which the mobile phone domestication process is embedded, the interviews broadened my understanding of the market system employed at Kantamanto. These observations and interviews also assisted me to understand the most accurate way of asking the survey questions. Realizing that twi was the dominant language at the market, the in-depth interviews helped in identifying which questions

to include in the survey instrument and how to accurately translate them in order for the traders to understand the survey questions

2.3.4 Cross Sectional Design

Following the in-depth interviews of the qualitative design is the cross-sectional design. The responses and questions generated during the qualitative design stage were used to set up the cross-sectional design stage of the study. In the views of Nardi (2006) when a survey is used at a single point in time on a sample then the researcher is employing the cross-sectional approach. It is clear from this that the cross-sectional design relies on the survey approach of conducting research. As a result, the techniques and tools employed at this stage of the research were survey techniques. The following section addresses the sample and the sampling procedure, and the data collection approach employed.

2.3.5 Target Population

This study focused on used-clothing traders at Kantamanto market. There are two broad groups involved in the trading of used-clothing at the market. These consist of importers and retailers. According to the acting body representing the importers, there are probably 200 importers. The retailers group, on the other hand, suggested their numbers run into 3000. However, these membership numbers are fluid as some members get in and out of the business depending on their personal assessment of business conditions. These numbers were consequently taken with caution.

2.3.6 Sample and sampling procedure:

2.3.6.1 Sample size:

In the view of Neuman (2007), in deciding on the sample size for a study one needs to consider the size for the target population. For a population under 1,000, 30% should be enough for representing the sample. Additionally, for large populations a 10% sampling ratio is enough to be equally accurate in representation. Consequently, for a target population of 3,000, this study decided on using a 14% sampling ratio, giving us a sample size of 420. Blaikie (2003) further adds that, the rule of thumb for nominal level data is that the cells of a cross-tabulation need an average of 10 (Blaikie, 2003). Hence, the sample size can be determined by the combination of the number of categories in two variables with the highest number of categories (Blaikie, 2003). In practice this means taking the table to be used in the analysis with the greatest number of cells. The variables that were considered in this study with the highest number of categories were "level of education" and “reasons for changing mobile phone handsets” with 6 and 6 respective categories. This produced a cross-tabulation table with 36 cells. Blaikie (2003) further adds that at this point each cell must have an average of 10 counts per cell as a result each cell must be multiplied by 10. Because 1 need an average of 10 counts per cell we multiplied the number of cells by 10. This gave me a sample size of 360. However, due to the earlier mentioned field challenges although the sample size target was 420, I ended up with 363 respondents. So, from the point of view of Blaikie (2003) and Neuman (2007) the sample size for this study can be considered to be representative.

2.3.6.2 Sampling procedure:

The cluster sampling method was employed in the study. Babbie (2005) identifies this sampling technique as a multistage sampling method, a part of the probability sampling techniques. It

relies on natural groups in the target population. First, the natural groups are sampled with members of each group being sub-sampled afterwards. Neuman (2008) walks us through the process by specifying the generation of a sampling frame of the larger clusters, drawing a random sample of the clusters, creating a sampling frame for cases within each selected cluster, then drawing a random sample of cases. This technique was employed as follows.

In mapping out the market of the importers and retailers, it was realized that there were two (2) categories of retailers (hawkers and retailers with stalls) and one (1) for importers. Within the category of retailers with stalls, the market is further divided into sections such as the winter clothes, jeans and khaki, sports' wear, children's and babies' wear, curtains and trousers, ladies' and men's undergarments markets in addition to the unsorted items market. Despite the availability of these sections based on the concentration of a particular item, there were instances that other clothing items interspersed some of the concentrated clothing for the mini markets. In all, eight (8) distinct segments were identified; this included one (1) for importers, six (6) for the retailers, and one (1) for the hawkers market. However, because preliminary evidence from the market showed that irrespective of the category of trade, the traders were involved in their business processes to the same degree there by making them a homogeneous group. Consequently, the type of trade was not a variable of focus for this study.

The total number of stalls for each cluster was estimated to vary from 70 to 500 based on the researchers' own count. Because of this variation and the difficulty in separating non-clothing stalls from each cluster of mini-market, the general sampling ratio based on the desired sample size of 420 for the 3,000 stalls gave a sampling interval of seven (7). This implies that after selecting the first stall between one (1) and seven (7) stalls the next 7th stall was selected. This

was restricted to only those stalls that were available for business on that day. In order to reduce the possibility of selecting a respondent more than once, the clusters were dealt with one at a time until the stalls for each cluster were exhausted. This process was repeated for all the eight (8) clusters. It must be noted that one of the eight (8) clusters was heavily populated with street hawkers who often traded on the borders of the market. The hawkers presented a unique challenge for the study. They, unlike the stall traders, are more fluid in their activities as they have no permanent place for trade. They therefore have no permanent location but once they find a location they stay there until the trading day is over. However, when they start trading they appear to be in a straight-line formation, especially, those on the borders of the market structure. Based on this fluidity, I had some assistance from five (5) trained field assistants who helped in the selection and interviewing of the hawkers on the same day. This process was repeated until the desired sample size of 420 was contacted. Although 420 respondents were targeted, only 363 participated in the study as some selected traders refused to participate in the study due to earlier reasons given during the in-depth interview and observational stages of the qualitative design. This registered a response rate of 86%. Consequently, 363 respondents participated in the survey. In total 374 respondents, consisting of 11 in-depth interviews and 363 survey interviews (Semi-Structured interviews) participated in the entire study. The breakdown of the 363 respondents included 29 importers, 310 retailers with stalls and 24 hawkers.

2.3.7 Data Collection Instrument and Procedure

During the use of in-depth interviews the study found out that the most dominant language for the traders was Ashanti twi. The questionnaires were administered in a face-to-face interview format. This became necessary because the respondents were initially uncomfortable with the researcher probing their activities as such it afforded the researcher the opportunity to clarify the

purpose of the study and address any misconception the respondents may have concerning the researcher and the study. It also enabled the researcher to probe specific responses and allowed visual observations. The survey questionnaire used in obtaining data consisted of:

- One-directional 7 point Likert scale for the factors that influence adoption of mobile phones and usage attitudes of the traders (41 items)
- Single items for socio-demographic characteristics
- Multiple response for appropriation of the mobile phone
- Open-ended questions

2.3.8 Measurement and Instrument Construction

Three main scales and single item questions were used in the interview schedule for the study. These scales were adapted from previous studies by Venkatesh and Morris (2000), Mathieson (1991) and Davis (1989) on technology adoption model. This included those that measured subjective norm, perceived behavioural control, and mobile phone self-efficacy all key factors with the potential of adopting technology for individuals. Each of these scales had a number of items that they measured. The subjective norm considered the influence of significant others had 2 items, the perceived behavioural control had 4 items, and the mobile phone self-efficacy had 5 items. These scales have been used on a number of occasions in various computer adoption studies with a consistent Cronbach's alpha of 0.8 signifying a strong internal reliability (Davis 1989; Davis et al. 1989; Mathieson, 1991; Venkatesh and Morris, 2000). By standard practice, for a scale to be considered internally reliable, its Cronbach's alpha value after conducting the internal reliability test should not be below 0.7. Consequently, a value of 0.8 is a confirmation of a high internal reliability level for the scales. These scales, however, only solicited for

information on the uptake of the mobile phone. Other sets of scales were therefore employed to examine the usage patterns, attitude of mobile users, and the life styles of users. The items for measuring usage patterns were developed based on the qualitative aspect of the study including the pilot study using the in-depth interviews and observations as well as existing literature on how traders use their mobiles phone across Africa. Additionally, the "mobile phone use survey scale" was adapted to measure the extent of attachment that traders have to their mobile phones. This enabled the researcher to understand the extent of the routinization of the mobile phone by looking at the extent of attachment as well as the conversion practices of mobile phone users. Bianchi and Phillips (2005) study on the "Psychological Predictors Of The Mobile Phone Use Problem" establishes the Cronbach's alpha for the mobile phone use survey scale to be 0.96 confirming a high internal reliability for the items on the scale. Of the 28 items on that scale 18 were adapted for the mobile phone attachment scale. All adapted scales for this thesis were constructed as 7 point Likert scales with responses ranging from strongly disagree to strongly agree or extremely untrue to extremely true. The following are the descriptions of the various scales used in this study. The first part of the questionnaire consisted of the subjective norm scale which had 2 items with a reported Cronbach's alpha of 0.863. This was followed by the "perceived control scale" which also had a Cronbach's alpha of 0.848 for 3 items, the "perceived mobile phone efficacy scale" had 5 items with a Cronbach's alpha of 0.881. The two largest scales were the "mobile phone attachment scale" with 18 items and a Cronbach's alpha of 0.792; the "life style scale" with 13 items and a Cronbach's alpha of 0.791. The Cronbach's alpha of all the scales used in the questionnaire proves that the questionnaire had high internal reliability.

2.3.9 Data Analysis

Data obtained from the respondents were analysed at two main levels. First, the in-depth interviews and the observations were thematically analysed using content analysis to identify the paths for the domestication process as it pertains to the traders by not losing site of the socio-cultural context of the traders. This helped to understand and contextualize the uptake, appropriation, objectification, incorporation and conversion stages of the domestication process. The data obtained using the survey technique was managed using PASW version 18. The analysis was done at two broad levels: bivariate and multivariate analysis. At the bivariate level the strength of associations, using chi-square test of independence, Cramer's V and odds ratio between the socio-demographic characteristics and the uptake of mobile phones as well as the stages of the domestication process were explored. Multivariate analysis such as two-way-analysis of variance, factor analysis, standard multiple regression and logistic regression were employed to explore, identify and establish the influence of the socio-demographic characteristics on the objectification, incorporation and conversion practices of the traders. However, because the study was conducted amongst used-clothes traders at the market, the findings cannot be generalized beyond those category of traders at the market.

2.4 Ethical Consideration

Various ethical principles were employed in the study to ensure that the respondents were not physically, psychologically and emotionally harmed. Prior to the beginning of interviews and survey administration, participants were fully briefed on the purpose of the study and guaranteed anonymity and confidentiality of the information they provided. In a number of cases, the respondents or a literate confidante were presented with my introductory letter, student and staff identification cards from the University of Ghana to confirm my status at the University of

Ghana. Only respondents who consented to participate in the study were either interviewed or surveyed. To guarantee their anonymity and confidentiality, no names were solicited in the interviews and survey. The data generated from all interviews and questionnaires were stored on a computer with both computer and data password protected. Finally, they were made to understand that the findings of the study will be shared with them. We now proceed to establish the background of the respondents in the study.

2.5 Limitations of study

Considering the fact that the sample selected for the study came from only used-clothes traders at Kantamanto market the generalizations made in the study is only applicable to the used-clothes traders at the Kantamanto market. Additionally, since technological innovations are embedded into existing socio-cultural context one has to be careful in generalizing evidence from a culturally specific environment to the wider general population. Additionally, although the study attempted to get the precise population size for the Kantamanto used clothes traders an exact population size could not be obtained due to the fluidity of the participants in the industry, a characteristic of the informal sector. In such an instance, the homogeneity of the population was obtained using the category of the trading activity such as being an importer, retailer or hawker. With these homogenous groups identified, it was easier to engage in a head count. This provided figures which were much closer to the real figures. This technique had to be employed because of the unavailability of figures for the breakdown for the categories of traders found within the entire region of the Kantamanto market. The following section deals with breakdown of the study participants.

2.6 Respondents and their Background

2.6.1 Age of respondents

One of the key demographic characteristics that seem to engender mobile phone usage patterns is the age of respondents. Scholars such as Castells et al. (2004) have reported that, younger mobile phone owners use the technology differently from their older counterparts. Age therefore is an important characteristic to explore for the purposes of this study.

Table1: Background of Respondents by Gender[1]

		Gender					
		Male		Female		Total	
		N	%	N	%	N	%
Age	15 - 24	**35_a**	**18**	**24_a**	**15**	**59**	**17**
	25 - 34	**71_a**	**36**	**30_b**	**19**	**101**	**28**
	35 - 44	**67_a**	**34**	**57_a**	**36**	**124**	**35**
	45 - 54	**23_a**	**12**	**37_b**	**23**	**60**	**17**
	54+	**2_a**	**1**	**11_b**	**7**	**13**	**4**
	Total	**198**	**100**	**159**	**100**	**357**	**100**
	Mean(SD)	**34_a (9)**		**38_b (11)**		**36 (10)**	
Level of Education Completed	Primary education and less	**11_a**	**6**	**21_a**	**13**	**32**	**9**
	JSS/JHS	**85_a**	**42**	**79_a**	**49**	**164**	**45**
	SSS/SHS	**88_a**	**43**	**57_a**	**36**	**145**	**40**
	Tertiary	**19_a**	**9**	**3_b**	**2**	**22**	**6**
	Total	**203**	**100**	**160**	**100**	**363**	**100**
Marital Status	Married	**110_a**	**54**	**82_a**	**51**	**192**	**53**
	No relationship	**56_a**	**28**	**25_b**	**16**	**81**	**22**
	Once married	**11_a**	**5**	**39_b**	**24**	**50**	**14**
	Stable relationship	**26_a**	**13**	**14_a**	**9**	**40**	**11**
	Total	**203**	**100**	**160**	**100**	**363**	**100**
Religious Affiliation	Charismatic	**147_a**	**72**	**125_a**	**78**	**272**	**75**
	Orthodox	**43_a**	**21**	**24_a**	**15**	**67**	**19**
	Other religion	**13_a**	**6**	**11_a**	**7**	**24**	**7**
	Total	**203**	**100**	**160**	**100**	**363**	**100**

Source: Researcher's Survey, 2013

The majority (63%) of the traders were aged between 24 and 44 years, a greater proportion of them were females (87%) than males (70%). This shows that the majority of the respondents were young and older adults. However, other respondents were much younger or much older than the majority. While 17% were below 25 years but not younger than 15 years, others were

[1] Values in the same row and sub table not sharing the same subscript are significantly different at $p< 0.05$ in the two-sided test of equality for column proportions. Tests assume equal variances.[2]

2. Tests are adjusted for all pairwise comparisons within a row of each innermost sub table using the Bonferroni correction.

older than 44 years (21%). The youngest respondent was 15 years and the oldest was 63 years old. However, a closer look at the table reveals that the female traders were generally older than their male counterparts. The average female was 38 years old while the average male was 34 years old (see Table 1).

Considering the fact that gender is a key distinguishing feature for this study all analysis focused on the gender differences that existed among the respondents for the study. This provides a background of making sense of the data in the context of any gender differences. This is especially necessary because studies abound on gender differences in mobile phone use in a general population with some pointing out that while men use it more for business purposes, women use it more for social purposes(Bianchi & Philips, 2005; Castells et al., 2007) . The table further shows that 363 respondents participated in this study with males representing more than half (56%) of the sample distribution. The table also shows that almost an equal proportion of males (67%) were married or in a stable relationship as women (60%). However, for the 22% who were not in relationships, a greater proportion of them were males (28%) than females. This implies that men were significantly less likely to be in relationships than the women. A more significant number of the women (24%) compared to the men (5%) were also separated, divorced or widowed (see Table 1).

The next characteristic to consider is the level of education. Table 1 shows that more than to two-thirds (85%) of the distribution have had JSS to SSS education. At both levels of senior secondary education there is no significant gender difference. A greater proportion of the 9% of the traders with Primary or less level of education, a greater proportion of them were women (13%) than men (6%). Although only 6% of the traders had completed tertiary education, a

greater proportion of them were males (9%) than females (2%) (see Table 1). This clearly indicates that both gender groups are more likely to have had JSS to SSS education. Although women tend to have had primary or less education, the men have had tertiary education. This also confirms that female respondents are more likely to have dropped out of school at the lower level of education, thereby confirming the national distribution on education (Census, 2010).

Religious affiliation is the only socio-demographic characteristic that showed no significant gender differences. A closer look at the table confirms why. More than four-fifths (93%) of the sample identified themselves to be of the Christian faith, be it orthodox (19%) or not (75%). Less than one third were from different faiths.

In conclusion, these characteristics shows that the sample of traders for this study come from all working age groups with some as young as 15 years and others as old as 63 years. However, women in this type of trade are older on the average than the men. Additionally, the majority of them were married and also have had JHS to SHS education although the women tend to have lower levels of education than the men do. However, the majority of the respondents were generally literate. A whooping majority of them professed to be of the Christian faith with majority being charismatic. This sets the stage for the cultural context of the participants for the study. It will be interesting to find out how these variables mediate the domestication process. We begin examining these relationships by addressing the first major stage of the domestication process, appropriation.

CHAPTER THREE

LITERATURE REVIEW

3.1 Introduction

The history of humanity is dotted with enduring evidence of defining events and processes, which spearheaded the unmistakable changes we see today. One of such factors is the role of technology in our societies. In the belly of archaeological and historical records is the abundant evidence of technological innovation defining every epoch of world history, consequently, the names stone, bronze, iron, industrial and information technology ages. At least that is the view of proponents of technological determinism. However, such change is only possible because of the simultaneous effect that both technology and society have on each other. One of such views explaining how society and technology interact to bring about social change is the domestication framework, an offshoot of the Social Construction of Technology (SCOT) approach.

It is imperative at this stage to review both empirical and theoretical works on the interaction between mobile phones and society, particularly, the domestication of technology with a bias towards mobile phones. Consequently, this chapter deals with the review of various studies that has explored the nexus between mobile phones and society. The presentation of this chapter begins with a brief discussion on the origins of the mobile phone as well as its current state in the world. I continue with a discussion of the nature and functions of the mobile phone, tracking the changes in design and functions and finally the uses of the mobile phone in the developed world all in the context of the elements of domestication: commodification, appropriation, objectification, incorporation and conversion.

3.2 Origin and Diffusion of the mobile phone

Since Alexander Graham Bell invented the telephone in 1876, it has paved the way for man to communicate with his fellow man from a stationary point. However, with the development of the mobile phone in the 1940s a new tool was handed to man; man can now talk to man on the move: location was no more a restriction (Lasen, 2005; Crabtree et al., 2003). It was only in 1973 that Martin Cooper made the first call on the first handset, which weighed 1kg in the USA (Shiels, 2003). Mobile phone communication is more than the handset. A single call brings to life an entire ecosystem with parts that are interdependent. Each element in that ecosystem has its own history of development. Ling and Donner (2009:31) succinctly summarise this to include a system that encodes, transmits, switches, channels, notifies and decodes our conversations on the handsets. Without these parts mobile phone handset irrespective of the design ceases to exist.

The history of the origin of the mobile phone is often traced to the development and use of radio-based communication and landline telephone. The marriage between these two technologies gave birth to what mobile phone technology represents today. Ling and Donner (2009), trace the first recorded use of such marriage to the 1860s when a certain Dr. Mahlon Loomis of Virginia in the USA was able to send and receive "electrical discharges" between mountaintops. Farley (2005) explained that discharges of such nature could carry information, because senders could arrange them into the dots and dashes of the Morse code. Although Dr. Loomis received a patent for this work he did not pursue it commercially. In the views of Agar (2003), Guglielmo Marconi (an Irish-Italian) took this a step further when he started to send radio signals over longer distance and increased the distance after every trial. He first begun with 9 meters and increased it gradually to 275 meters, 3 kilometres and the span of the English Channel. He finally completed his task by I90I when he succeeded in sending messages across the Atlantic Ocean. By I910, he

achieved a wider coverage when he was successful in sending messages across 10,000 kilometres (United Kingdom to Buenos Aires).

In the wake of the tragedy of the Titanic, ships were mandated to have a 24-hour radio availability on board, thereby, moving the radio technology into its first major commercial space. According to Ling and Donner (2009) Lee De Forest Morse took the form of transmitting on the radio a step further to add on to the Morse code by including voice after inventing vacuum tube in 1906. This paved the way for a two-way radio communication via voice – the reason for the emergence of radio broadcast for commercial radio stations and the adoption of the radio by the military. It was until the 1940s when Bell Labs in the USA emerged with the capacity to have a large number of smaller "cells" with their own transmitter and with the ability to hand off calls as the individual moved from one cell to another arose. It was in 1969 that the cellular system was finally employed as a pay phone on the Amtrak Metroliner between New York City and Washington DC and then in 1973 Martin Cooper used the first hand-held mobile phone (Seen in Figure 2.

Despite this potential the mobile phone did not become a commercial product on the mass market in the USA where it was first discovered until 1983 (Lasen, 2005). This was largely due to connectivity problems and the lack of a common platform for interconnectivity. In the 1980s the Europeans solved this problem by coming together to develop a common platform called the Global System for Mobile Communication (GSM) and its alternative version Code Division Multiple Access (CDMA); the two widely used platforms across the globe with some few variations in China. Other developments with the mobile technology especially in the mid-1990s included the development of data options apart from voice, such as, SMS (text), Wireless

Application Protocol (WAP), Multi-media Messaging (MMS), different types of mobile internet access and TV. By handset design the mobile phone handset's weight has reduced from a 9.5 kilos Nokia handset in the late 60's to 1 kilo in early 70s and 80s with a battery life of 30minutes to 100-200 grams currently for most mobile phone handsets. The commercial models cannot be exempted as they contributed to its origin. These models over time reduced the cost of managing a handset and giving more financial control to the user. This reflects in the post-paid and prepaid payment systems that have been employed over the years. Today, nobody can dispute the fact that the mobile phone is the single most common telecommunication gadget in the world. Its usage is increasingly changing the way people communicate with each other. As a result, it is bound to influence society one way or the other. It is therefore imperative to understand the social consequences of such a pervasive technology.

Figure 2: Cross-section of Mobile Phone History in Pictures

Source: http://curiousphotos.blogspot.com/2009/06/evolution-of-mobile-phones-21-pics.html

In 2003, the mobile phone gained status as the most widely used telecommunication gadget in the world. Castells et al. (2004:7) noted that it is "diffusing around the planet faster than any other communication technology". The evidence available on global diffusion shows that as at 2000, the number of mobile phone subscription to the landline telephone had dropped from 31:1 in 1991 to one mobile phone to less than two mainlines (Castells et al., 2004). Although Africa

has the lowest diffusion rate (at about 6%) it had been judged to be the continent with the highest annual increase of 65% in 2003 (Castells et al., 2004; ITU, 2012).

Research shows that the increasing global diffusion of mobile telecommunication has contributed to narrowing the century old gap in telephone usage between highly developed and less developed countries (Geser, 2004). One of such studies showed that in 2001, one hundred nations (many of which were African) had more mobile phones in service than landlines, and that cell phone technology is far more potent than computer technology in connecting less privileged populations to the sphere of digitalised information (World Communication Development Telecommunication Report, 2002).

In order to adequately establish its impact, Crabtree et al. (2003) in their study on British mobile phone users, argue that the "technology needs to be understood as a dynamic process between the intentions of designers and manufacturers and the way in which users choose to experiment, modify and improvise with it" (2003:2). In support of this, Castells et al. (2004) add that the history of technology teaches us that people and organizations tend to use the technology in a much different way than what the initial designers thought. Indeed, "the more a technology is interactive, the more it is likely that the users become the producers of the technology in its actual practice" (Castells et al., 2004:1). With respect to this, it can be argued that mobile phones on their own cannot cause any impact in the society, it is only when end users put it to use that a corresponding change can be observed in the lives of the people.

The evident increasing diffusion of mobile phones across the planet, especially Africa, presents a challenge to social researchers to understand its nuances, especially, the unanticipated ways that users make use of the technology. One cannot ignore the role that the cultural space, in which the

technology is found, plays in shaping its unanticipated usage patterns as well as the changes therein. Although, there have been various attempts at understanding the social impact of the mobile phone, a lot needs to be done since technology today is fluid in design and functions (Castells et al., 2007; Lasen, 2005). This is well captured in the definition of what a mobile phone is:

> It comes in a variety of forms, colours and sizes, and with a spectrum of functions. It is a camera and a photo album with a high-resolution colour screen and it is an FM radio, MP3 player, video player. It is a gaming terminal and it is an internet access point where we can read e-mail, IM and access social network sites. It is a calendar and a contact manager. It is a GPS navigation system. It allows for text production and the development of presentations and other office-related functions. The mobile phone can also be a payment device not unlike a credit card. Indeed, the mobile phone can do the jobs of many of the items we currently carry in our wallets or purses (aside from, for example, water bottles and the like).
>
> (Ling and Donner, 2009:43)

Now, with the advent of smart phones, this list of features is endless, and their functionality and appropriation is undefined. The fluidity in the features of the mobile phone handset as well as the accompanying applications warrants continual studies to understand how culture and by extension, society, accommodates these rampant changes. I focus on three sets of studies that which explores the nature and functions of the mobile phone, those that investigate the uses to which end users put it and finally, the reasons for its increasing presence in the world, with special emphasis on Africa.

3.3 Nature and Functions of the Mobile Phone

The word mobile takes its origin from the Latin word "mobilis" which Crabtree et al. (2003:5) explain it to mean- “Easy to move, movable, loose, not fixed, not firm, pliable, nimble, flexible, agile, swift and rapid, readily changing its expression, able to change one's social status. In a negative sense inconstant, fickle and changeable”. This further gives impetus to the mobile

phone as a facility that aids communication on the move, thereby making location a non-entity in most instances.

With regards to its nature, the mobile phone has been categorised in various ways, notable among them is Palen and Salzman's (2001:136) four major characteristics which include "hardware (handset, battery and charger), software (menus, and display-based controls), Netware (network, type of service) and bizware (marketing communication, details of the service agreement, calling plans, sales policies and customer service)". In this regard, for any user to function as mobile as the Latin definition is, then he/she needs to be able to understand the hardware, software, netware, and bizware thereby presenting a complicated technology to the end user (Lasen, 2005).

However, despite this complexity of conceptualization, Geser (2004) noted that because of its user-friendly interface, which enables it to transfer voice, text message, pictures, musical sound and software programmes, the mobile phone has caught on well with varied end users such as young children, illiterates, and other marginal population segments not able to come to terms with complicated technology such as MS office. This therefore is increasingly making the mobile phone a technology for all classes, all ages, gender, all professions, and all levels of literacy.

The landline in its days of dominance made social classes more visible. As Geser (2004:5) succinctly puts it:

> The landline phone was a rather exclusive means of communication, which was not readily accessible to lower class women, farmers, and younger age groups...and was mainly used by middle and higher class males for instrumental purposes.

The mobile phone has established itself as the technology that truly unites the world into a global village no matter a person's socio-demographic background.

3.4 Usage Patterns

Owing to its ubiquity, scholars have investigated the underlying reasons for people's enthusiastic ownership of such a gadget. Lasen (2005) identified functions such as sending and receiving calls and messages, phone book and calendar, clock, games, calculator, online data, caller identification, personal voice mail-as some of the reasons for the increasing presence of the mobile phone. However, in a related research in Australia, AMTA/ARC (2007) identified calling and SMS texting as the most predominantly used functions of the mobile phone. Although some other users confirmed using functions such as capturing or sending visual images, playing games, entering competitions or voting on SMS polls, accessing the internet and using the phone as an MP3 player or a radio, it was rather on the low side. In 2012, AIMIA identified sending and receiving emails followed by visiting websites and or searching the internet for information as part of the five top uses of mobile phones in Australia (AIMIA, 2012).

Since the two most predominant uses of the mobile phone- calling and texting- most studies have analysed its uses across three basic variables: age, gender and socio-economic status. Of the three, the most predominantly discussed variables are age and socio-economic status. Most of the discussion on Africa has focused on the socio-economic status of the continent. For purposes of this study, the discussion will focus on age and gender as well as on the socio-economic background of the continent.

3.5 Age Differentiation

Various groups are motivated to use the mobile phone for different reasons: amongst teens and young adults it is because of accessibility and display, for families with children, it is largely due to coordination and for older users it is essentially because of safety and security (Ling and Haddon, 2001). Be it SMS or talk most research works done on the youth and the mobile phone identify a particular pattern concerning how they use the mobile phone. As mentioned earlier by Ling and Haddon (2001) both young adults and the teens are motivated to use the mobile phone for two main reasons, that is, the issue of accessibility, and display. Ling (2004) further identified that the utility of the mobile phone to the youth can be discussed under two main perspectives, that is, functional uses and symbolic uses.

Functional Uses of the mobile phone amongst the youth consists of security and the issue of coordination. Just like the adult users, this happens to be the most dominant reason why parents obtain the handset for their children, it makes it possible for the children to be accessible to their parents at all times thereby allowing parents to play their traditionally accepted role of keeping a close eye on their children who at that stage in their lives are quite vulnerable (Castells et al., 2004; Lasen, 2005; Ling, 2004). As one mother reports

> I have a 17 year old, and the worst thing I know is when she goes downtown. I am so afraid, but I just have to accept this, you know. But it helps that she has a mobile telephone because she can call if something happens...because she needs to go out and experience Oslo. She has to learn about the world (Ling, 2004:100).

The UN succinctly expresses this view in the World Youth Report as follows: the mobile phone "creates what one might call an extended umbilical cord between youth and their parents" (World Youth Report, 2003:322).

The other side of the coin that dominates this discussion is the privacy it provides the youth. Unlike the telephone the mobile phone is the only mobile communication technology which enables the youth to communicate in a language that is only meaningful to them. It is therefore not surprising that they rely heavily on SMS. The youth have also been identified using the cell phone to manage their social interaction, what is known as the "coordination of everyday life" (Ling and Yttri, 2002). This enables the youth to redirect trips they have already started, arrange to meet friends, and identify the location and time for the meeting to take place. Should there be further changes in the time and place schedule, they are able to call or send an SMS ahead of time for the needed changes to be effected. According to Haddon (2000), the coordination uses of the cell phone has made it possible for the youth- especially teens- to continuously stay in touch with their friends while at home: reducing the number of times they need to meet at a public place. Essentially, therefore the youth are increasingly turning their homes (a private place) into a "public" environment where they can exchange information and still have their privacy (Crabtree et al., 2003). As one individual puts it:

> If you have a mobile phone you can change plans along the way. You don't need to agree to meet either; you can just call whenever you want actually (Ling, 2004:101).

Consequently, this allows teens' quick access to information on their peer group members' whereabouts and thereby allowing them quick mobilization (Ling and Donner, 2008).

Usually the various meanings assigned to symbols can easily be transferred to the users of such symbols. In this respect, Ling (2004) identifies that the mobile phone has the same symbolic attributes. This is so because the youth usually want to stay in constant touch with their peers. The mobile phone, as a tool that makes its user easily accessible to others, has therefore become a powerful tool for peer interaction. Ling (1998) further identifies that the mobile phone shows

that the individual has attained a certain level of economic achievement as well as a high level of technical competence. In a related issue, Fortunati (2003) adds that, the ownership of the right type of mobile phone proves that teens are abreast with the current fashion trend. This is adequately captured in the words of one youth "if you don't have a mobile, you are out of it! The model has a lot to say, you know: A Philips "Fizz" from 1995 is nothing that you show off."(Ling, 2004:104). The above interview shows that, to the youth it is just not about having a mobile phone but having the latest "showy" model of a particular kind of mobile phone.

In connection with this, Geser (2004) established that adult usage patterns differ from young people's usage patterns, with adults concentrating on voice calls while young people embrace text mails characterised by the emergence of language jargons familiar to family and friendship circles. For instance, in South Korea Cheil Communication reports that in May 2003 93% of young Koreans between the ages of 17 and 19 sent or received SMS at least once a day (2003). Other agencies in Korea also report that SMS use decreases with age, while 92% of people aged 20-24 text daily, the same is true for only 47% of those for aged 35-39. In China it is also reported that SMS is heavily used among users who are under the age of 35 (New Weekly, 2002). Quantitative evidence from Italy, France, Spain, Japan, UK, and Scandinavian countries supports this claim (Castells et al., 2004; Hashimoto, 2002; Ito, 2003; Ling, 2004; Paragas, 2000; Rautiainen and Kasesniemi, 2000).

In a related study, Lasen (2002) explained that some young women affirmed using the short messaging service (SMS) or text messaging, for friends and parents, but using a different style for each group: abbreviations are for friends but not for parents. In exploring youth preferences for SMS Lasen (2002) sets the tone for discussion by establishing that young users prefer SMS to

calls because it is cheaper, quicker and more practical, and in certain contexts, nicer. Additionally, Eldridge and Grinter (2001) note that youth use SMS to arrange times to chat, and to adjust arrangements already made; to stay in touch with others and to coordinate activities with absent family members. Lastly, text messages were often used just to chat or gossip.

People also chose text messaging because having grown accustomed to the user interface on the phone, it serves as a faster mode of communication. The fact that the absolute cost of a text message is cheaper than making a phone call serves as an added incentive (Eldridge and Grinter, 2001). This is especially the case for the unemployed youth who cannot afford the cost that is associated with talking over the phone (Castells et al., 2004). Another point is the fact that SMS is more convenient than other communication methods because they could avoid long, unwanted and rambling conversations. Text messages are also discrete, when in a public place one can convey a message to another sharing it with the public audience.

Finally, because SMS construction requires physical and mental abilities, and some free time to become an efficient user, the youth who seem to have free time easily at their disposal see it as an opportunity to be creative (Castells et al., 2004). It is therefore no wonder they have been able to develop jargons and shorthand that are only meaningful among their circle of friends. As Taylor and Harper (2001) put it, text messaging facilitates youth culture. With the control that young users have over SMS they are the likeliest to embrace future changes in the mobile phone handset. To Bianchi and Philips (2005), age is an important factor in explaining the features on the mobile phone used by people. They identified that, younger people are more likely than older people to use the SMS function and other features on the mobile phones.

3.6 Gender Differentiation

On the basis of gender differentiation, Castells et al. (2004) observed that across the Organization for Economic Cooperation and Development (OECD) countries in Europe, Japan, South Korea, China and in some respects U.S.A., although more men own cell phones than women, women are increasingly closing that gap. Castells et al. (2004) attributed a contributing factor to the narrowing of the gap to the fact that the handsets being produced are specifically "gendered' to appeal to women. In some instances, as noted by Geser (2006), more women own mobile phones now than men.

Although there is increasingly very little difference in the ownership of mobile phones based on gender, Castells et al. (2004) as well as AMTA/ARC (2007) observed differentiation on the basis of usage. Women tend to use their phones to maintain intimate personal relationships, while men relate to it for instrumental purposes. With a click of a button, mobile phones present to women an ability to check on their domestic duties while at work. This act of policing has been referred to as ‘remote mothering' (Ling and Haddon, 2001).

3.7 Mobile Phones in Africa

Like the rest of the world, Africa has witnessed the deep penetration of mobile phones, so deep is it that as far back as the year 2000, the mobile phone overtook the telephone as the most widely used communication gadget in Africa. The infrastructural cost associated with expanding access slowed down telephone penetration rates. Although Africa has the lowest mobile phone penetration rates in the world, it is the continent with the fastest growing penetration: reported in some quarters as 65% as at 2013 (ITU, 2014). Additionally, mobile phones in Africa have shared ownership and maintenance as such although only 6% of Africans had a mobile phone in 2003 a

single mobile phone could be shared and maintained by more than one person. A number of factors explain the craze for mobile phones in Africa

Castells et al. argue that the "connectivity associated with having a means of communication whether mobile or not" (2007, p. 218) is one of the main reasons mobile phones have gained such prominence in Africa. In Africa other forms of communication such as roads, transportation, landline infrastructure, and postal service are quite poor. As a result, people place more value on the mobile phone than in the developed world (Vodafone, 2005). Another reason for the dominance of the mobile phone in Africa is because of the prepaid service system. As Vodafone (2005) reports, the presence of the prepaid service allows subscribers to control their spending. Although this exists in the developed world, it is more predominant in developing countries (Castells et al., 2007; Crabtree et al., 2003). Castells et al. (2007) further add that the increasing availability of low cost handsets on the African market as pioneered by Motorola and the availability of community phones have further deepened the roots of mobile phone communication in Africa.

3.8 Uses of Mobile Phones in Africa

Castells et al. (2007) identified similar uses of mobile phones in the developing and developed world; for social and business purposes. However, in Africa, very little differentiation can be made between business uses and social uses. This is because interpersonal connections often contribute to social capital formation which is important in small businesses formation (Castells et al., 2007). In this regard, they identified the mobile phone as a tool for managing business, extended family, and other external relations and obligations.

In most countries in Africa, there are reports of mobile phones enhancing business activities. In Zambia, it is reported that the mobile phone is being used to make cashless payments, at laundry marts, petrol stations, and at dozens of bigger shops and restaurants (Ramirez, 2005). Ramirez (2005) further reports of it being used by fishermen and farmers to check prices at different markets before selling their produce. It has also made job seeking easier. Politically, the Royal African Society (2007) reports that people can now participate in any radio call-in programme to also vent their frustrations at their governments as they no longer have to walk miles to talk to a friend about it, thereby gaining direct public hearing.

The impact of the mobile phone has also not left out family lives, as there are reports about how mothers can now coordinate the activities of their homes just at the click of a button. It is therefore not surprising that Castells et al. (2007) identify that the mobile phone is heavily used for family coordination activities more frequently among families with children.

From these reports on Africa, it can be concluded that the mobile phone is permeating the social fabric of the society (Ramirez, 2005). A lot has, however, changed, especially, in the area of access to the mobile phone since the Vodafone (2005) report. Nine years ago, mobile phone subscription was at 53 million in Africa, with reports of subscription hitting 113.55 million in 2005. In 2011, more than half of Africa's population were active mobile phone subscribers. As shown in table 1, Africa has enjoyed over 300% increase in active mobile phone subscription per every 100 inhabitants across the continent, recording 60 in 100 inhabitants in 2011 as against 19.33 in 2006 (see Table 2). This confirms the near ubiquitous nature of the mobile phone. Despite this quantum leap in ownership under just a decade, very little is known about the

biographies of the mobile phone and the accompanying cultural changes that are left in the wake of the ownership and usage history (Cellular Online, 2006; ITU, 2012).

Table 2: Average Mobile Phone Subscription

Average subscription for every 100 inhabitants in Sub-Saharan Africa						
2006	**2007**	**2008**	**2009**	**2010**	**2011**	**% Change**
19.33	26.22	35.48	42.13	52.70	**59.81**	**309.4**

Source: ITU ICT Indicators Data, 2012

This study, therefore, explores the biography of mobile phone usage in an African context. The rationale for doing so is to interrogate the role that the cultural space plays in shaping the mobile phones unanticipated usage patterns as well as the changes therein. Although there have been various attempts at understanding the social impact of the mobile phone, a lot more needs to be done since technology today is fluid in design and functions.

3.9 Theorizing Mobile Communication

Different scholars have employed various theories to explain the adoption and usage of mobile communication among people mostly in the developed nations. These theories can largely be grouped into the adoption theories, the impact theories, the usages theories and gratification theories. Although there are increasing empirical works stemming out of Africa, the majority do not attempt to theorize either the adoption or the usage of mobile communication. In order to contribute to this, I attempt to place the domestication theory in the context of existing theories from North American and European settings.

3.9.1 Theories on Adoption

At the most basic level is technological determinism. Technological determinism holds the view that technology shapes and transforms society. To proponents of this theory such as Leo Marx and Merrit Roe Smith (1998), a closer look at the major historical changes will reveal that technological advancement in human history spearheaded these changes. For instance, the invention of the printing press made the bible easily accessible beyond the confines of the bishops, the invention of the compass and the steam ship led to the discovery of other continents, the development of manufacturing machines provided the basis for capitalism to start. Indeed, history is dotted with evidence of technology's presence transforming some aspect of society thereby leading to social change across the world. Technological determinism is of three parts: hard and soft and those that fall between the two extremes. It further holds the view that technology's intrinsic value is imputed with agency consequently the advance of technology leads to an inescapable necessity to rely on the change engineered by technological innovations. Critics of this approach have pointed out that it is erroneous to assume that human societies and individuals for that matter do not have the capacity to employ their free will and their power of choice over technology as such are encoded to operate in a particular way because of the exposure to a particular technology. Additionally, no technology no matter how powerful its metaphysical attributes may have managed to act on its own without human intervention.

Since the 1960s, the leading theory for explaining the adoption of technology has been Everett Rogers' (1983/2003) framework, the diffusion of innovation. Rogers traces this inter-disciplinary framework's origin to Gabriel Tarde's "laws of imitation" and George Simmel's "Stranger" both forefathers of Sociology in Europe during the 1900s. These ideas heavily influenced the works of early rural sociologists and anthropologists alike, albeit different methodological approaches.

Adding on to this tradition were a group of British and German-Austrian diffusionist who were concerned with how new innovations spread from its original source to others. This group were the first to have used the term "diffusion". However, it was American anthropologists in the 1920s who were most influenced by these European diffusionists (see Wissler, 1914/1923). Despite the anthropological interest in diffusion studies, it was the hybrid corn diffusion study in Iowa by a group of rural sociologists, Bryce Ryan and Neal Gross (1943), that greatly influenced the research methods, theoretical framework and interpretations of later studies in diffusion with social science traditions. After conducting 259 personal interviews amongst farmers living in two small communities in Iowa in 1941, to assess how a greater yielding seed (hybrid corn) moved from a novice seed to become the most widely used seed amongst the farming communities, Ryan and Gross, identified several things that contributed to the diffusion of such an innovation amongst the farmers.

They explained that there is a time lapse between the awareness of the innovation and the period of adoption amongst the farmers and the mediation of the entire process by varying communication channels. These communication channels are largely dependent on the existing social networks with the social systems of the farming communities. At the point when these networks started spreading the positive news about the higher yields being recorded by the farmers the innovation gained a higher acceptability amongst the farmers. In the process Ryan and Gross identified an S-shaped curve during the adoption stages of the hybrid corn seeds. It is from this perspective that Rogers credits Ryan and Gross with the development of the classical diffusion paradigm. The revelations from the Iowa study propelled American rural sociologists with funding from U.S. Agency for International Development (USAID) and some private foundations to extend diffusion studies to developing nations across Africa, Latin America, and

Asia during the 1960s. In that same decade, Rogers published the first edition of his Diffusion of Innovations book. Over the decades, he published five editions with the final edition appearing in 2003. These editions have over the years examined various diffusion studies and during the period enabled him to identify various conceptual frameworks of the diffusion studies. In the process, he suggested that the diffusion of innovations has four main elements: first is the existence of a new idea (the innovation), followed by the existence of communication channels, then the time frame for the idea to be diffused and finally the existence of a social system. By going through these elements, an idea soon gets adopted by a social group. A closer look at the time frame that the innovation gets adopted reveals what he called the Adoption model- a five stage model that shows how an innovation gets adopted. Over the decades Rogers came to the realization that the entire business of the diffusion of innovations is to explain how, why, and at what rate new ideas and technology spread through social systems.

In answering these questions, Rogers (1983/2003) identified five stages of the adoption process: innovators, early adopters, early majority, late majority and laggards. These categories of adopters were arrived at based on having a mutually exclusive and exhaustive categorization system that focused on specific sets of characteristics. Rogers explained that people decide to take up one new idea or technology at different stages of the technology's lifetime. At the early stages of that life are those he classified as the innovators, the people who are driven by the desire to be the first to own or try out a new idea and are willing to go through the disappointment that follows such ownership. Three key elements that define the innovator are the possession of substantial financial power, the willingness to accept the high level of uncertainty that comes with a new technology or idea thereby making them risk takers and finally the one who introduces a novice idea into the boundaries of the social system. They consequently act as

the gatekeepers of new technologies to the social system. In numerous instances, they are not respected by the social system since they are more cosmopolitan in their behaviour. Rogers (2003) estimates that 2.5% of all users of a particular technology are innovators.

The next progressive category of adopters is the "early adopters". The early adopter is more integrated into the social group and is often considered as the one to consult before using any new technology since they are regarded as the embodiment of advice for using new technology. Their views are therefore considered paramount to potential adopters and other members of the social system. Their role is to reduce uncertainties about a new idea by adopting it and the conveying a subjective evaluation of the innovation to close peers by the means of interpersonal networks. This group is often represented by I3.5% (estimation) of the population.

The third category of adopters is the group he called early majority. This group has the intention to adopt, but they hardly lead in the decision to adopt. Their decision to adopt takes a much longer time than the innovators and the early adopters even though they may be aware of the new idea at the same time as the early adopters or even the innovators. This is the reason why they adopt the new idea just before the average member of the group. By his estimation 34% of the population are represent the early majority. Unlike the early majority, the late majority adopt new technology just after the average member of the social system. Members of the late majority group are the sceptics who only adopt a new technology because it has become an economic necessity and an incessant network pressure. In fact, without the pressure from peers there is little motivation for them to use it even after they are informed of the utility for owning such an innovation. He further estimated that the late majority group represents 34% of the population.

The final group is what he called the laggards. When they finally adopt an innovation it may already have been superseded by a new innovation that is already being used by the innovators and to some extent the early adopters. They are suspicious of innovations and people who spearhead these changes. They are always looking to the past in order to make decisions for the present. If there is no reference to the innovation in the past then they resist its uptake. In his estimation, 16% of the population are laggards. The representation of the adoption path can be examined using a normal curve.

There are two key sources of influence for the individual to adopt. The first refers to opinion leaders (similar other members of the social system but are differentiated from other members due to their advanced knowledge in the new idea or technology as well as their cosmopolitan and higher social status). A second source of influence is "change agents" (technocrats with university or professional education who are also members of the social system) and not the innovator. Finally, the decision to adopt can be segmented into optional (decides on his own), collective (decides with others) and authoritative (imposed by others) decisions (Rogers, 2003).

According to Rogers (2003), the transition for an innovation to be adopted by the innovators and other categories of adopters is due to five main variables, namely: relative advantage, compatibility, complexity, trialability and observability. Indeed, all these five are positively related to the adoption rate of any new innovation. In examining the utility of this model for mobile phone adoption in Finland, he explained the relative advantage that the mobile phone has over other communication technologies by pointing to its time saving capabilities with reference to how it makes an individual reachable at all times. Additionally, the increasing dropping prices

for mobile phone handsets and the ability to personalize the handset also its handy nature has given it advantage over communication technologies.

In terms of compatibility he makes reference to its compatibility with an individual's life style especially the need to get in touch with loved ones, business partners, and even in emergency situations. In terms of complexity, the mobile phone handset operates in the same way as a telephone. Consequently, one need not learn typically new sets of skills to enjoy its benefits. Its sharable nature also makes it possible for others to demystify any assumed challenges with using such a technology before deciding to own one. This is what "triability" reflects. The final variable is "observability". The ubiquitous nature of the mobile phone in all public places makes it possible for people to observe it by both watching and listening to its usage further making it more appealing for its adoption.

Beyond Rogers, others have also employed this approach to examine several aspects of mobile phone adoption. While some looked at the adoption of specific applications such as mobile banking among individuals (Brown et al., 2003), others also used a variation of this approach called the Technology Acceptance Model (TAM) to predict mobile adoption across different groups in India (Vantekesh et al., 2000), Nigeria and Kenya (Meso, Musa, and Mbarika, 2005).

The utility of this approach, however, does not go beyond the adoption of a technology to consider issues relating to the impact of the adopted technology on social behaviour. The diffusion of innovation approach assumes a linear progression of ownership with its typology of adopters. It also tends to give more credence to the designers of the technology than the users, thereby ignoring the power of the user to influence the outcome of technological designs and their accompanying functions. Other theories have attempted to address these shortfalls. Notable

among them is the domestication theory, an offshoot of the social construction of technology (SCOT) theory.

3.10 Theoretical framework underpinning this study

Two theoretical perspectives relied on for this study are the adoption model from Everette Roger's diffusion of innovations theory as discussed earlier and the domestication framework pioneered by Silverstone and his colleagues in the 1990's and discussed below.

3.10.1 Domestication of technology

Domestication as a concept evokes a picture akin to the history of agriculture and the development of human habitats such as the city, especially, the vision of man taming wild animals in order to live with or near man's habitat. A similar technique used to tame plants laid the foundation for the emergence of Agriculture. In its basic form, domestication refers to the taming of a wild animal. Berker et al. (2006) observe that anytime users are confronted with new technologies, a semblance of the domestication of the wild can be observed irrespective of their environments. Scholars such as Silverstone, Hirsch and Morley (1994) as well as Silverstone and Haddon (1996) share this view. This process begins with the 'strange' and 'wild' technologies being integrated into the structures, daily routines and values of users and their environments, a phenomenon they called 'house-trained', confirming the prominence given the household. Silverstone (174: 1994) succinctly defines this process in two related ways, the first being "a process both of taming the wild and cultivating the tame. It is where nature becomes culture" and "as both a process by which we make things our own, subject to our control, imprinted by, and expressive of, our identities; and as a principle of mass consumption in which products are prepared in the public fora of the market."

There are two broad origins of the domestication framework, the one developed by Silverstone et al. (1994) from Northern Europe and the Scandinavian version spearheaded by Sorenson (2006). However, Sorenson's (2006) view finds meaning in that of Silverstone et al. (1994). Consequently, the classical view as expressed in the works of Silverstone et al. (1994) will be examined.

The classical view of domestication as a framework explains that it is a process of taming the wild and cultivating the tame as well as allowing the public market environment to serve as the centre for the mass production of products. This view was built on three main blocks in the 1990's: the domestication process, the moral economy of the household and the biography of things. I proceed by considering the domestication process.

As a process, domestication has several components with a perceived linear progression (at least in the early stages of the framework). This includes commodification, imagination, appropriation, objectification, incorporation and conversion. In later writings of Silverstone and his group this was refined and reduced to 4 stages, namely: appropriation, objectification, incorporation and conversion.

3.10.2 Commodification and Imagination Stages

This is the creation stage of the artefact, where the artefact is given "life" and brought into "existence" by the designers and introduced to the rest of the public with the aid of marketers, then placed on the shelves in the public market space. In the words of Silverstone, the Commodification stage refers to the:

> Industrial and commercial processes which create both material and symbolic artefacts and which turn them into commodities for sale in the formal market economy. It also refers to the ideological processes at work within those material and symbolic artefacts,

> work which defines them as the products and, in varying degrees, the expressions, of the dominant values and ideas of the societies that produce them (Silverstone, 1994, p. 124).

It is at this stage that the artefact is brought into being and given a purpose by the designers and emerges in the public space of exchange. Once the artefact leaves the domain of the factory and the "hands" of its designers it moves to the next stage called "imagination". Ling (2004) describes the imagination process as the ways the device enters our consciousness. At this stage, advertising and marketing agencies "put" images and rhetoric on the object to publicize the "illusionary" functions of the object hoping to entice people to obtain it. These images are what lead people to acquire the object. These images often portray the imaginative and actual uses of the artefact, however, it is the latter that often gets transformed by everyday experience (Silverstone, 1994). These images are what fuel the desire for the artefact.

For instance in the work by Lim (2006), the Chinese marketers of ICT products, including the mobile phone capitalized on the Chinese belief that education is integral to a child's development. Consequently, ICT tools were presented as essential educational tools if parents wanted their children to have the edge over other children as well as become better than their parent's generation.

> ''I let my child teach me how to use the computer. I think it's quite good because he sees himself as the teacher. After all, he does learn about computers in school. Children learn fast and in this way, I learn along with him. Actually, I don't think computer games are necessarily bad either. They can stimulate his interest in information technology, and improve his reaction time. When I play with him, I can never win." Mother, 39, Freelancer, Family 4, Shanghai (Lim and Soon, 2010:212).

This is further confirmed by how urban Chinese parents are excited when they find themselves learning one or two tricks from their children in composing and sending an SMS message for

instance (Lim, 2006). This clearly shows the influence of culture on the uptake of technology at the commodification and imagination stage.

3.10. 3 Appropriation

Once advertisers and marketers spark people's desire to purchase the artefact, people start purchasing the artefact and that takes us to the next stage of the process called the "appropriation" stage. At this stage, people purchase the artefact based on the perceived functionality of the gadget as expressed by the designers with the support of advertisers and marketers. As Silverstone et al. (1994) explain, an artefact is appropriated at the point at which it is sold, and leaves the world of production and is taken possession of by an individual or household and owned. Harwood (2011) calls it "transferred into ownership". This shows that at this stage the eventual user is the one who consciously proceeds to purchase the object based on the influence from the earlier stages of commodification and imagination. Appropriation therefore is the stage at which the individual gets to know of an object, imagines how the device will be used and fitted into his life and finally ends up buying it (Ling, 2004; Shekar, 2009), all of which is structured by the marketers and designers:

> ''At first, I thought having the mobile phone would be so convenient because you can always contact each other. But when the mobile phone signal is weak and you can't get through to them (your children), you feel so anxious. Before we had the mobile phone and we weren't able to contact them, we just didn't think about it. But with the mobile phone, sometimes they're not contactable, the phone is turned off or you're not in a networked area . . .it stresses me to death!" Mother, 39, Manager, Family 1, Beijing. (Lim and Soon, 2010:212)

Appropriation therefore becomes the stage of purchasing an object based on what you perceive it will help you achieve in your life, a perception that is largely driven by designers, marketers, and friends. People will always have expectations of new objects, but as to whether these

expectations are real or imagined will depend on the actual application of the object in their daily routines.

The nature of the appropriation stage raises several questions when placed in the context of culture. For instance, what happens to this stage if the said artefact was not consciously purchased by the individual but was obtained as a present? In a gift giving culture like that of Ghana, how do individuals appropriate the mobile phone, a personal ICT gadget? Knowing that culture also varies from one sub-group to the other, how do traders appropriate a personal ICT tool like the mobile phone into a non-purely domestic space, such as the market centre? Consequently, to examine the appropriation stage, this study looks at what factors influenced the uptake of the mobile phone amongst the traders.

3.10.4 Objectification

Once the artefact is in the possession of the individual, it is then taken to the household and given a place within the space of the household symbolizing the values of the household. This represents the objectification stage. Through use and display, the artefact portrays the household's value and identity. During this stage, the artefact is actively shaped to fit with the physicality of the household. Silverstone et al. (1994) add that, through objectification, the pattern of spatial differences is affirmed providing insight into the geography of the household redefining what is shared, private, and contested vis-a-vis adult, child, male and female among others. Silverstone et al. (1994) further add that all technologies have the potential to be appropriated into an aesthetic environment and the aesthetic display of such technologies in the environment cannot be understood in isolation from the aesthetic nature of the environment. Finally, objects appear and are displayed in an already constructed and reconstructable spatially

meaningful environment. This shows clearly that once the objects are purchased and taken to the household the next stage takes care of how that object will be displayed, particularly, in ways that will fit into the aesthetic space of the environment and ensuring that the space it occupies throws more light on the values of the household. In the view of Shekar (2009), this is the stage where the device is placed within the household. Ling (2004) applies this to the mobile phone by making reference to the symbolism of ringing tones of mobile phones. Objectification therefore is a way that an artefact helps to solidify the sense of the self. In this respect, Ling (2004) does not limit display of the object to the household. For instance owning the latest mobile phone bestows some form of social status on the individual:

> **"Frank:** All my friends are great, they have the best cars and the best and most expensive stereos, the most expensive TVs, and the most expensive mobile telephones. And since nobody has bought that Philips yet, then I will be the first."
>
> (Ling, 2004:31)

This shows clearly that to some people if you want to be accepted as part of a social class the kind of mobile phone handset you have can assist in placing you in that group. In Korea for instance, Lim and Soon (2010) report that parents do not want their wards to be left out of what society expects of them:

> ''My kids are not using ICTs as much as other kids so I'm worried that they will be left behind." Mother, 40, Teacher, Family 9, Seoul. (Lim and Soon, 2010:211)

In an earlier study on assessing ICT domestication among small businesses, evidence abounds on how ICT use helps to solidify the user's self by allowing for a reconceptualization of the self, in some instance it forces users to act younger than their age:

> Clients get younger… so once these people become clients, they probably will all communicate via e-mail. At that moment you cannot afford to not follow this trend. So, it is almost a necessary evil … (Marc, accountant, male, 43)

(Pierson, 2006:212)

At the objectification stage, ICT is helping to define the identity of the user. It will be interesting to understand the ways in which mobile phone display symbolizes the values of the individual trader by helping to solidify their identity.

2.12.5 Incorporation

The incorporation stage is the stage of usage. Here the technology is used beyond the features birthed with the technology. In other instances, the functions are totally overhauled and replaced by new functions or additions are made to it. Over time, through the usage of the technology, users end up transforming the original functions that designers and marketers assigned to the technology. Silverstone (1994) adds that for a technology to become functional, it must find a place in the routines of the household moral economy. This suggests that a technology that fails in being routinized will fall out of need and get discarded. Due to this, functions of technologies are very fluid. Today, a computer may be bought for the purpose of doing academic work, soon it becomes a game console and very soon it will end up on the shelves, tucked away as an antique. We can conclude that every technology from the objectification to incorporation stage has two key functions, the permanent functions as ascribed to it by it merging with the physical space of the household (objectification) and the temporary functions as imputed at the incorporation stage due to its functional fluidity. Soon the object starts carrying symbolic meanings to the outside world about the values of the household.

2.12.6 Conversion

This is what represents the conversion stage, the final stage of the domestication process. The public gets to understand and place you in a defined status based on how they understand the meanings you assign to the technology. Through conversion, the device is displayed beyond the

boundaries of the household while others get to talk about the device as a technology. Conversion deals with the public understanding of the household's relationship with the gadget/artefact or object. Silverstone (1994:22) succinctly explains as follows:

> conversion, like appropriation, defines the relationship between the household and the outside world—the boundary across which artefacts and meanings, texts and technologies, pass as the household defines and claims for itself and its members a status in neighbourhood, work and peer groups in the 'wider society.

Shekar (2009) adds, conversion also talks about how the device is displayed and talked about.

In summary, the domestication process presents four distinct linear stages which begin with the individual recognizing the need for a particular object and proceeding to purchase it based on the perceived functionality assigned to it by the designers and marketers. Once purchased the device is placed in the spatial context of the household as well as the aesthetic and social values of the household, taking up a more permanent function of space differentiation based on the display of the object. Soon, the individual applies the technology to his/her daily routine in a fluid manner. This highlights the temporary nature of the functions of the technology: it changes as and when the routines of the owner changes. Beyond this point, the owner starts displaying the gadget in ways that the society at large starts interpreting their relationship with the gadget.

Central to the domestication framework is the concept "domestic". Silverstone et al. (1994) approximates this to the private space of the individual, specifically, the household and the family. By their definition, the household is a moral economy. It is an economy because its members are themselves involved in the productive and consumptive activities of the society and "a complex economic unit" in its own right. Its moral functions lie in the fact that the productive and consumptive activities of its members within the household are "defined and informed by a

set of cognitions, evaluations and aesthetics, which are themselves defined and informed by the histories, biographies and politics of the household and its members." (Silverstone et al,.1994:16). By extension, the household is a moral economy because it is "a social, cultural and economic unit actively engaged in the consumption of objects and meanings." Through the consumption of ICTs, the moral economy of the household is expressed in two key ways. First, it assists the household to achieve its identity, integrity and security as a unit; it also enables the household to continuously engage in the commodities and symbols in the public sphere.

One way that the moral economy of the household can be revealed is through what Igor Kopytoff (1986) calls the biography of a thing. As Silverstone (1994) explains, things have biographies or history of their existence. Through an examination of that history a lot can be revealed about the cultural environment that ensured its survival right from its creation to its demise as one is able to observe the changes and the transformations as well as the cultural changes that went with it:

> …the computer software, the television programmes and the telephone conversations also have biographies as they too pass through a succession of phases and stages in their life cycles and as they reveal, in their passage, the containing cultures and environments which help define their particular meanings. (Silverstone, Hirsch and Morley 1994:15)

In conclusion, as a theory, the classical domestication theory was built on three core concepts: the domestication process, the moral economy of the household and by extension the biography of things. However, the theory, over the years, has been criticised for its reliance on the household and by extension private spaces and also for creating the impression that the domestication process is a linear process, thereby putting an erroneous emphasis on the need to move from one stage to the other in a progressive manner. This can probably be linked with the ambiguous nature of the definition of the concept of domestication. At one point in the writings

of Silverstone et al. (1994), domestication refers to taming the technology, at a different point it was used to refer to bringing technology home to one's private space thereby giving an impetus to the household and the family. At another point it was used to refer to the implication of the public display of the relationship between the user and the technology to the public space.

Notwithstanding the criticisms the ubiquity of the mobile phone in the last decade in Africa paves the way for researchers to understand the biography of the technology by exploring the entire process involved in accessing and making the mobile phone an extension of ourselves, from the point of owning the technology to the point of deciding to dispose of it. In exploring the biography of mobile phone usage, therefore, this study seeks to understand how the technology is domesticated in an African context. It is from this background that the following chapter provides the Ghanaian context of telephony.

CHAPTER FOUR

GHANA'S TELEPHONY STORY

4.1 Introduction

This chapter is devoted to tracing the history of Ghana's telephony story. It begins with the emergence of the landline telephony technology in the late 1800s through the precolonial, colonial, postcolonial and the present eras showing the country's struggles in connecting the entire country. In the process, also showing how the mobile telephony technology developed with its accompanying revelations.

4.2 Beginning of Ghana's Telephony Journey

Ghana's telephony journey can be traced as far back as the late 1800s to the British, the then colonial masters of Ghana (Ayensu, 2003; Addy-Nayo, 2001; Allotey & Akorli, (n.d)). In the early days (1881), they introduced telephone lines into a few sectors like the postal services. Forty-seven years, later, the technology was increasingly being used by other service industries apart from the principal post offices. Allotey and Akorli (n.d.) chronicles Ghana's early telecommunication history in their paper Telecommunication in Ghana (http://www.vii.org/papers/ghana.htm). They placed this history into four key categories: Pre-colonial, Colonial, Postcolonial, and the present era. In their expose they identified that the first telegraph line in the then Gold Coast was a ten mile link installed in 1881 between the castle of the colony's then governor in Cape Coast and Elmina. This was later extended to the Christianborg Castle in Accra and extended further to Aburi 26 miles outside Accra. Soon (1887-1889), these lines were extended to cover Accra, Prampram, Winneba, Saltpond, Sekondi, Ankobra, Dixcove and Shama as well as all colonial castles, fort towns and commercial ports

and fishing centres. Historically, the Yaa Asantewa war between 1900 and 1901 witnessed how this new communications technology was influential in winning the war for the colonial masters. This influenced the locals to believe that the telegraph lines carried some magical powers that enhanced the Europeans to win wars in Ghana. As a result, the locals resorted to cutting them down. The colonial governors realizing this entrusted their safety and security to the tribal chiefs in 1886 by rewarding chiefs handsomely for reporting any damage done to the lines.

In response to the desire to expand and improve communications in the southern part of Ghana, the first manual telephone exchange with 70 lines was installed in Accra in 1892. This was increased with 13 additional lines in Cape Coast with a second manual exchange in 1904. During the British colonial rule there was the penchant for facilitating economic social and political administration of the colony consequently, when the Ashantis were brought under colonial rule the telegraph lines were extended to the Ashanti Kingdom and beyond. Allotey and Akorli (n.d.), further showed that by the end of 1912 close to 1,500 miles of telegraph lines had been constructed to link 48 telegraph offices throughout the Gold Coast. After the development of the first backbone of the main trunk telephone routes (Accra-Takoradi, Accra-Kumasi, Kumasi-Takoradi and Kumasi to Tamale) in 1920, by 1930 the number of exchange lines had grown to 1,560 connecting the Coastal, Central and Northern Regions. However, the 1940s global economic depression due to the Second World War affected the expansion and growth in the telecommunications sector. As a result, no additions were made to the lines until the 1950s when 200 lines were installed to replace the manual ones mounted some six decades earlier with the installation of automatic telephone exchange. This affected the trunk lines across the country as they also saw an upgrade through the installation of a 48 and 12 channel VHF network.

Things changed drastically soon after Ghana's independence in 1957. The release and implementation of Ghana's first seven-year development plan under the Nkrumah government, hastened the completion of a second new automatic exchange in Accra, which increased the telephone subscription to 16,000 while 32,000 rotary-type telephones were in use in Ghana by the end of 1963. During that same period, telephony services were extended to other parts of Ghana when new manual exchanges were installed at Cantoments, Accra, Swedru, Koforidua, Ho, Tamale, Sunyani and Kumasi. These were the Strowger and Philip UR 49 switch exchanges.

In the early days, the Public Works Department was initially responsible for the management of Ghana's telecommunication. As a result of the enactment of the Post Office Ordinance in 1886, it was later transferred to the Post Office. This changed during the Postcolonial period when that responsibility was transferred to the government's Post and Telecommunications Department until 1970s. When the National Redemption Council Decree No. 311 declared the Post and Telecommunication Department a public corporation it paved the way for a new chapter to develop in Ghana's telecommunications system. The department was placed under the authority of the then Ministry of Transport and communication, now Ministry of Communication, which was responsible for policy formulation and the control of Ghana's telecommunications sector. Under the instrument of incorporation, the now defunct Post and Telecommunication Corporation (P & T) was administered by a board of directors who functioned as the corporation's governing body. This instrument helped define the administrative structure as well as the operational running of the corporation. For the first time the corporation had a director general who was accountable to the board of directors and also responsible for the organization, maintenance, and development of all the corporation's services both domestic and international as well as the determination of financial policies. The director general also ensured that

government policies on telecommunication were implemented and that rules and regulations governing the various services as well as international conventions were correctly interpreted and acted upon. He was assisted by two deputies - the deputy director general for engineering and the deputy director general for posts.

According to Addy-Nayo (2001) in 1994 the then Ghana government decided to deregulate the country's telecommunications sector. This led the Government to launch a five-year comprehensive restructuring of the industry known as the "Accelerated Development Program 1994-2000 (ADP 2000).", a policy that was formulated with the assistance of the World Bank, consultants and other stakeholders. This policy among others aimed to:

- Achieve a density between 1.5 and 2.5 lines per 100 people;
- Improve public access in rural and urban areas, through the provision of payphone facilities (public and private);
- Expand the coverage of mobile services;
- Promote Ghanaian ownership and control of telecommunications companies; and
- Retain an overall public regulatory control of the sector through the creation of a single agency: the National Communications Authority (NCA).

The ADP adopted the following strategies to achieve the above-stated policy objectives:

- the authorisation of two national network operators: Ghana Telecom and a new independent operator;
- support of new financing: arrangements which promote investment in new telecommunications infrastructure throughout the country; and

- privatisation of Ghana Telecom through the sale of a strategic stake to an international operating company combined with measures to broaden share ownership in Ghana.

The implementation of the Accelerated Development Program (ADP) led to the break-up of the Ghana Posts and Telecommunications Corporation and the institution of Ghana Telecom on 15th June, 1995. Addy-Nayo (2001) further adds that in December 1996, Ghana Telecom privatised its main line operations by awarding a Malaysian-led Consortium (Telecom Malaysia) a 30 per cent stake in the state company with full management control for USD 38 million.

As part of the ADP reforms, Addy-Nayo (2001) pointed out that an African Communications Group, led by Western Wireless Company (based in Cambridge, Mass., USA) and Ghana National Petroleum Company, won the bid as the second telephone network operator with an offer of USD 10.1 million. The consortium, which traded under the name (WESTEL), planned to invest between USD 40 million and USD 70 million over a period of five years from its incorporation in the 1996. However, by 1999 WESTEL was still struggling to make significant headway, and Ghana Telecom was suffering from underinvestment. Addy-Nayo reports that Ghana Telecom's profit before tax declined from 26.13 per cent in 1995 to a low of negative 1.94 per cent in 1999 whilst total borrowings grew from 53 per cent in 1995 to 79 per cent in 1999. This contributed to the corporation's decision to venture into mobile telephony. This gave birth to their flagship mobile phone subsidiary called Onetouch in 2000. However, poor delivery of service badly crippled the company and government was increasingly forced to sell its stake in the company. Between 1994 and 2009 governments stake in Ghana Telecom reduced from 100% to 30% in the process changing hands from a full Malaysian management control to Telenor of

Norway and finally to Vodafone. On July 3, 2008, the Government of Ghana announced the sale of 70% share to Vodafone for the purpose of making the company more profitable.

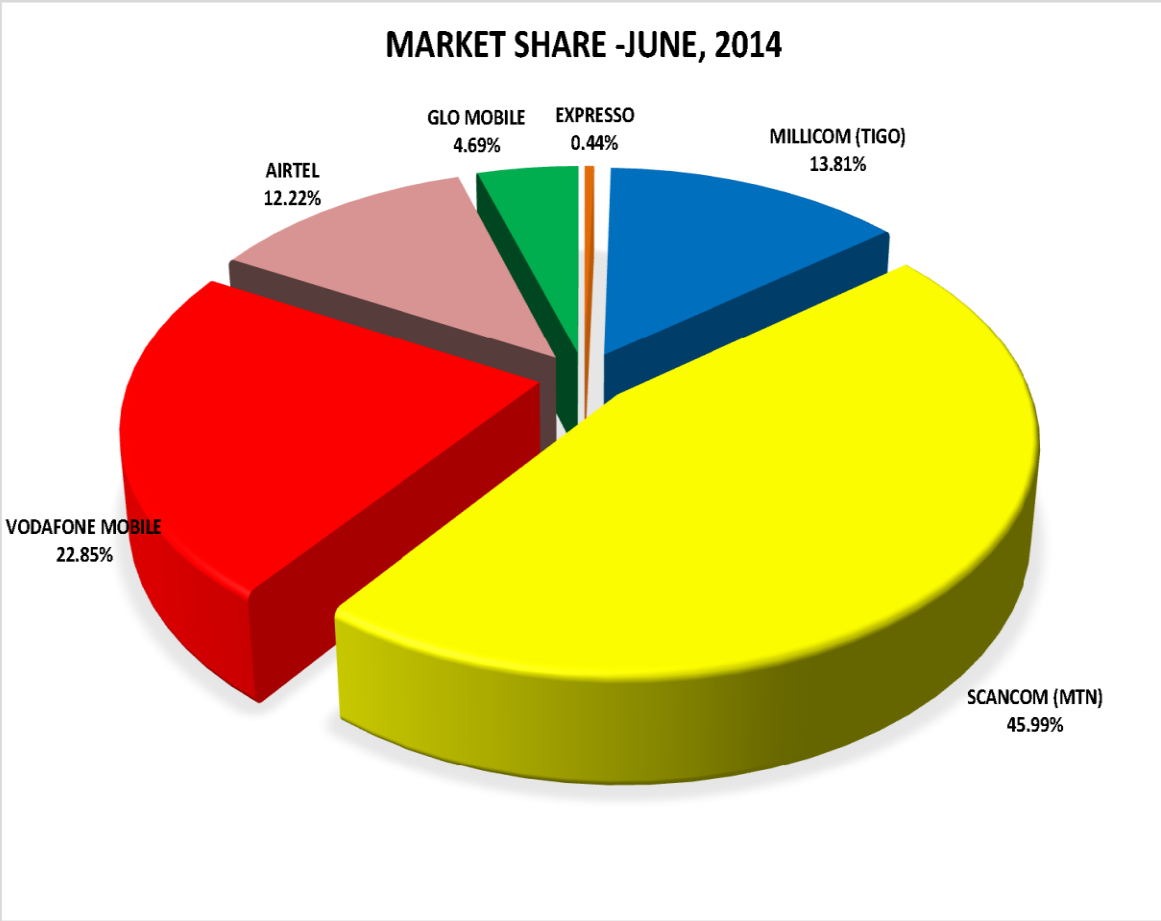
The mid 1980's saw the landline telephone appearing in most rich Ghanaian homes. This was so because it served as a status symbol for them. The introduction of phone booths in the early '90s as well as the mobile phone moved landline telephone access from the houses of the rich to the larger poor populace thereby increasingly bridging the telecommunication gap between the rich and the poor.

According to Ayensu (2003), the emergence of phone booths in Ghana was very exciting. They initially came out in the early 1990's: during that period there were very few of them and they were very costly. However, as technology improved, different companies figured out different ways to make it financially feasible for the average Ghanaian to use a phone booth. The adoption of a prepaid calling card system led to a 275.78% rise in public payphones in Ghana between 1997 and 1998 (ITU, 2000).

Mobitel's introduction of the mobile phone in 1992 changed the dynamics between landline and wireless phones; in that year alone 19,000 Ghanaians owned a mobile phone (Ghanaweb, 2007). Ghana is one of the few African countries with a vastly liberalised telecom market. This process began in 1996 when Ghana Telecom- a state monopoly was privatised with the objective of increasing telephone coverage in the country through mainly private sector participation. However, it must be noted that liberalisation of the telecom industry was in line with a broader government objective of liberalizing the entire ICT sector. The benefits of this policy were easy to appreciate; ICTs could reduce transaction costs in the economy, facilitate trade and economic activities as space and distance become compressed through the provision of information and

communication at low cost. Since the liberalisation of the ICT sector, there has been a phenomenal increase in private participation in the telecom industry particularly in the mobile sector. Currently, Ghana has six mobile network providers (see figure 3).

Figure 3: Mobile Network Providers in Ghana and their Market Share



Source: National Communication Authority, 2014

These six mobile network operators are fiercely competing among themselves for the mobile market. This has resulted in lower tariff rates for consumers. Currently, MTN Ghana has 45.99%t of the mobile phone service market, Vodafone Ghana 22.85%, tiGO operated by

Millicom Ghana 13.82%t, Airtel 12.22%, Glo Ghana the latest to arrive has 4.69% whereas Expresso, which was until recently Kasapa, has only 0.44% (NCA, 2014)

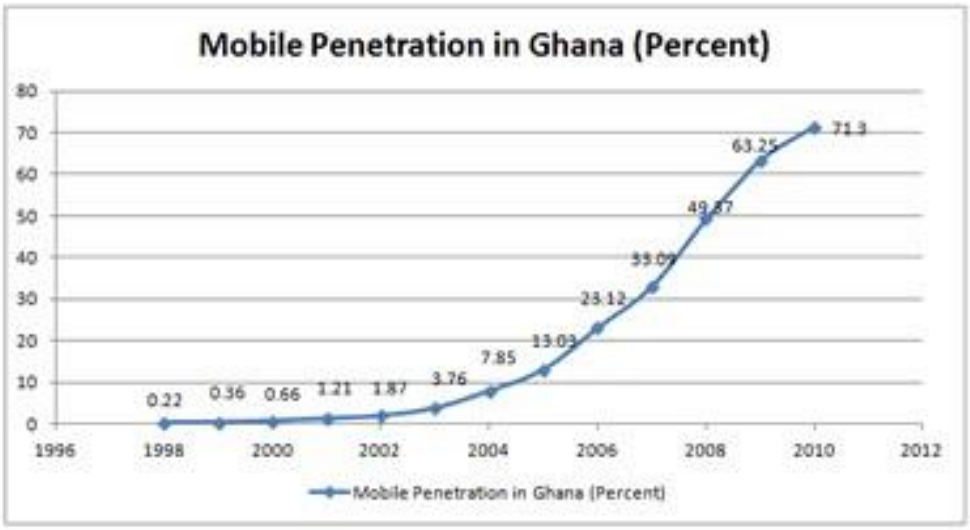
From 1996 to 2000, the mobile phone industry grew significantly. Although at the end of 2000, the national penetration rate was 1.6%; with mobile phones at 0.5% and fixed telephony at 1.1%, at the second quarter of 2007 the national penetration rate stood at 32.2% with mobile and fixed telephony going for 30.3% and 1.9% respectively (NCA, 2007). Indeed, there are international reports that show that, as at 2006 there were 5.207 million mobile phone subscribers-at a point when the national penetration rate was 25% (CIA, 2007). This, according to the National Communication Authority, further rose to 7.2 million subscribers by the end of the fourth quarter of the year 2007 (NCA, 2008). However, the 2010 Ghana population Census put the individual ownership of mobile phone, irrespective of the number of handsets owned, at 47% of Ghana's population aged 12 years and above. A closer look at the same census confirmed significant regional differences with only Greater Accra (74%) and Ashanti Region (56%) recording more than the national population owning mobile phones. Despite its widespread nature, mobile phone ownership is more predominant amongst Ghanaian urban dwellers than rural folks (Ghana Statistical Service, 2012).

Mobile phones have been great for people on an individual level, because it allows individuals to stay in touch with family and friends all over the world. Businesses are also benefiting because they can get information from one point to another with superior ease recognizing the limited availability of landlines. Fixed telephone lines, albeit highly inadequate, have traditionally been the main direct medium of communication between individuals who are separated by space. In Ghana, fixed line penetration was about 284,721 in 2011 (www.itu.int/ITU-D/ICT 2012).

Although, fixed line tariffs remain the lowest in the country, they are out-dated and unreliable, a factor that contributes significantly to the popularity of mobile phones, the subscription of which is currently hovering around 21,166,000 amounting to about 90 per cent of the population having access to mobile telephony.

The high mobile penetration level can partly be attributed to the fact that fixed lines provision is limited to the urban areas, particularly the two major cities: Accra-Tema and Kumasi and the other regional capitals. However, fixed line infrastructure as indicated above is antiquated and unreliable. Ghana seems to have leap frogged from a situation of highly inadequate or absent fixed lines into the mobile telephony era. The high penetration can also be attributed to the functionality of the mobile phone: it is easy to use and there is no literacy barrier for its basic function: communication. Unlike the internet, both literate and illiterate members of society can use it and as new mobile phone manufacturers China and Korea entered the market with their new products, mobile phone prices have declined considerably such that they are no longer considered a luxury. Figure 4 depicts Ghana's mobile phone penetration as at 2012.

Figure 4: Trends in mobile telephony penetration in Ghana



Source: National Communications Authority (NCA), Pal Ecommerce, US Census Bureau

As fixed internet penetration at home is low (only 9.14percent of household have computers) mainly because of high cost and low penetration of fixed line phones, mobile phone network providers are increasingly bridging the gap by providing internet services via mobile phones, for example Vodafone Ghana's Broadband4U. Indeed, all mobile network service providers particularly MTN, Tigo, Vodafone, Airtel, and Glo now provide internet support services that enable individual subscribers to be on Facebook, Youtube and Twitter for example. In this respect, the mobile phone is now the major tool for accessing online information with 23percent active mobile broadband users as against 14.1percent of computer based active broadband users. This is evident in table 3.

Table 3: Ghana ICT Country Profile 2010-2011

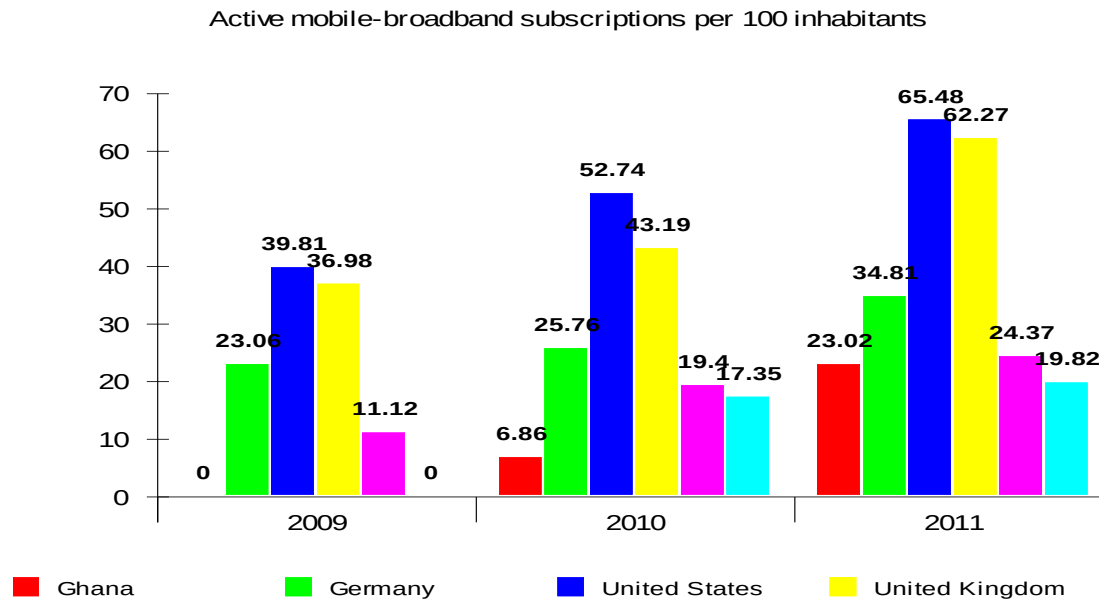
Indicators	Units	2010	2011
Population	000	24,392	24,966
FIXED TELEPHONE NETWORK			
Fixed telephone subscription per 100 inhabitants	%	1.14	1.14
MOBILE CELLULAR NETWORK			
Mobile cellular subscriptions	000	17,437	21,166
Mobile cellular subscriptions per 100 inhabitants	%	71.49	84.78
INTERNET			
Fixed broadband subscriptions per 100 inhabitants	%	0.21	0.25
Active mobile broadband subscriptions	%	7	23
Households with a computer	%	9.14	
Internet users	%	9.55	14.11
SOCIAL MEDIA			
Facebook penetration	%		6.77
Twitter			2,150

Source: ITU ICT indicators 2012 and www.socialbakers.com/facebook-

This phenomenon was virtually non-existent prior to 2010. Although Ghana recorded almost 7percent in active broadband subscription rate in 2010, by 2011 this rate had increased to 23percent, 5percent more than the rate for the United Kingdom and the largest jump for any African country as shown in figure 5 (ITU, 2012). Based on this data, it is clear that Ghana has

made some great strides towards making internet accessible to its population even if they cannot afford a standard computer. This also indicates studies done on Ghana before 2011 will most likely not encounter the varied opportunities available to Ghanaian mobile phone owners as a result of internet access through their mobile phone and the possible social consequences there in. These changes in the possible uses of the mobile phone also call for studies to understand the social consequences that the additional features of the mobile phone is having on the Ghanaian society by looking at the biographies of these technologies within the Ghanaian context.

Figure 5: Active mobile-broadband subscriptions per 100 inhabitants



Source: ITU ICT indicators 2012

Mobile phones are bought and sold by private individuals, service providers or are imported from Europe and Asia in two main forms: brand new or used. There are varying prices that make

the purchase of the phone affordable for many people. Once the phone is purchased, a device known as a smart chip sold only by the service provider and its vendors is also purchased.

Unlike the U.S for instance, these providers do not charge monthly fees, unless requested by the customer (Castells et al., 2007; Vodafone, 2005). The smart chip provides the individual with his/her own number and allows Ghanaian mobile phone users to purchase a prepaid card which they install on to their smart chips when their minutes have been depleted. Smart chip technology and its ability to allow individuals to purchase additional minutes as needed, have also contributed to the widespread use of mobile phones (Ayensu, 2003). Texting and flashing are other characteristics in addition to cost and services that have made mobile phones popular. The reasons for using text messages in Ghana are no different from those noted for users elsewhere (Eldridge and Grinter 2001).

The increase of mobile phones in the society due to costs, services and unique uses like texting, 'flashing', sharing of handsets, gift culture, the availability of used handsets, and the availability of repair staff has led to fierce competition between service providers (Africanonline, 2003; Asante, 2011; Overa, 2008; Hahn and Kibora, 2008; Araba-Sey, 2011). This competition is causing foreign companies to increase their business ventures, which consist of the adoption of high tech services such as, Wireless Application Protocol (WAP), GPRS, 3G, 3.5G and now 4G which provides Internet services via mobile phones. Indeed, this shows that Ghana is making some positive strides in technological advancement. For instance, in the year 2011 Ghana had more people accessing the internet through their handsets than any other medium (ITU, 2012).

The reason for the boom, Ayensu (2003) asserts, is the inherent cultural tradition of public interactions. As such, mobile phones quickly found a place in African culture where people are

constantly on the move and always want news of their relations (Africaonline 2003). Hahn and Kibora (2008) also point to the liberalization of African economies, the culture of sharing, the reliance on oral transmission of information, and the ability to control the cost of making calls. Ghanaian society thrives on people's ability to constantly communicate with one another. The need to always be "in touch" coupled with others is the contributory factors to the increase in mobile phone usage. Thus, cultural interaction has contributed to Ghana's technological advancement. From these explanations and breakdown given, it is obvious Ghana is not left out of the globalized world.

The development of the mobile phone industry in Ghana has gone beyond individual ownership of the gadgets to what is now known as shared access and maintenance. According to Castells et al. (2007), shared access and maintenance is one of the key characteristics of the mobile phone development in developing countries, especially Africa. The most obvious example of this is the mobile pay phone service, the commercial shared access also known in Ghana as "space-to-space" and the call card vendors. The non-commercial shared access includes the family and community sharing of a mobile phone. These modifications of mobile phones have further expanded mobile access to include non-owners of mobile phones. Consequently, those who do not have a mobile phone of their own can stay connected to those who own one.

The third phase of the mobile phone service development although not yet researched into is what is known in Ghana as the credit transfer system. This is the kind of system that enables subscribers to electronically (through a credit sales vendor of ones preferred network) buy and forward some talk time based on the amount that one has, thereby, making the prepaid system a much more reliable means of financing ones mobile phone. Indeed, it is not surprising that

Cellular Online (2006) reports that 95% of African mobile phone subscribers were on the prepaid system as at 2006. This innovation has been attributed to the stiff competition amongst the mobile phone service providers in the country.

The increasing access of mobile phones in Ghana amongst people with different socio-economic backgrounds, different age cohort has led to the introduction of various innovative strategies to use the mobile phone to enhance the everyday life of Ghanaians.

4.3 Innovations in Mobile Phone Usage in Ghana

4.3.1 Esoko

The increasing ease of access to mobile phones in Ghana and Africa has led to the development of innovative means to enhance agricultural trading activities amongst West African farmers. This led to the development of TradeNet now Esoko in Ghana in 2007. The development of this technology started in 2005 under the auspices of BusyLab with its investor Mark Davies. According to its press release, TradeNet allows users to sign-up for SMS alerts for whatever farm produce and in whichever region they are interested in. Users can request prices which are provided in real time on the network from many market indicators that are active throughout 380 markets spread across the continent. Users can also indicate their areas of business and receive instant SMS alerts for offers to buy or sell as soon as anyone else on the network has submitted an offer via their mobile phone (TradeNet, 2007).

To date, TradeNet boasts that 540,000 prices have been collected, 386 markets setup, 2,312 users added, 1,934 news stories submitted and over 200 files uploaded for distribution through their website. Noting that most of these producers have little or no formal education, TradeNet has set up data collection points in major agricultural produce market centres in Accra, the capital city of

Ghana. People who are well versed in text message development and eloquent in the local language of the market area are in charge of these points. They collect information on the product type, quantity and prices available for sale from the traders and forward this information by SMS for it to be uploaded on to the network for a buyer or a seller. Through this mechanism, according to the TradeNet (2007) managers, Burkinabe onion producers are finding markets in Accra and a Middle East trader found an organic fertilizer seller in Nigeria. In its current form, Esoko represents "a powerful communications platform to help you mange agricultural value chains" (https://esoko.com/, home page 2014). Currently, it operates in 9 African countries across Western, Eastern and Southern African countries.

4.3.2 mPedigree: Mobile Phone Innovation In Health

Another institutional innovation that was developed based on the peculiar nature of the sale of fake drugs across Africa is Bright Simon's mPedigree, a free SMS based application which is used to confirm whether a particular drug is genuine or counterfeited (http://mpedigree.net/mpedigreenet/images/docs/Computerworld_mPedigree_Case-study_2012.pdf, 2012). This innovation is especially important because about 20percent of drugs sold in developing countries are counterfeits thereby leading to preventable deaths and complications in health patients. Through this innovation, manufacturers, retailers as well as consumers can confirm if a particular drug is not a counterfeit by just texting a special code on the package of the drug through the mPedigree application and a confirmation will be received by the texter if the drug is a counterfeit or not. This innovation has some challenges especially with the final consumer. The practice in Ghana in most pharmacies and hospitals is the retail of drugs, especially tablets, by the number of tablets one can afford without the original package

included. It is therefore impossible for a consumer to confirm if the unpackaged tablet is genuine. A second problem has to do with the fact that our high illiteracy rates make it difficult for some segments of the population to use this platform.

4.3.3 Mobile Money

In the financial sector, the most notable innovation has been the introduction of mobile money transfer systems. Two major networks, MTN and Airtel pioneered this innovation. Airtel also pioneered mobile insurance in Ghana. These banking options have the potential for opening up the spectrum of banking to unimaginable proportions by connecting families, friends and businesses across the length and breadth of Ghana, especially the non-traditional banking populations.

Despite these innovations, most researches on mobile phones and society have focused attention only on what Crabtree et al. calls "elite groups of heavy users". This includes young urban professionals, mobile workers and teenagers who are largely literate (2003:2), as well as the uses such groups put the technology. In addition, not much emphasis is placed on exploring the biographies of phones, the entire process involved from whence the mobile phone was owned, to when it finally gets disowned and abandoned. Using the domestication theory this thesis will seek to elucidate this in the Ghanaian context.

CHAPTER FIVE

UPTAKE AND THE APPROPRIATION OF THE MOBILE PHONE

5.1 Introduction

This chapter focuses on examining the process involved in the adoption of mobile phone among the current sample for the study. It will consider the influence of what Rogers (1983, 2003) refers to as significant others in addition to the role of other agents. It will also consider the adoption model as provided by Rogers (1983, 2003) to understand the extent of its usefulness with regard to the levels of adopters the market centre tends to exhibit. The final section of this chapter will also examine the imagination and appropriation stages of the domestication process. Two key frameworks will be employed to make sense of the material in this chapter. The first is the diffusion of innovation theory as proposed by Rogers (1983, 2003) and second, the Silverstone et al.'s (1992/ 1994) domestication theory. According to Donner (2008), while Everett Rogers's diffusion of innovation theory explains the purchase and uptake of technology, it falls short of explaining the continual usage and routinization of an artefact. This is the domain of domestication theory.

In proceeding to show how respondents of the study appropriated (owned) the mobile phone we start by assessing how they came to own their current handsets, and what convinced them to choose their current handset. We will also examine their handset ownership history, reasons for change in handsets over the years, the household history of mobile phone ownership and finally we will consider the features of the mobile phone they considered before purchasing their current handsets. These will help us establish the biographies of the mobile phone and how such biographies contribute to our understanding of the factors that contribute to the uptake of mobile phones, especially amongst the traders. All these issues will be examined by considering their

association with key socio-demographic characteristics of the respondents. We begin by examining the respondents' mode of ownership.

Table 4: Respondent's Background and Mode of Handset Ownership[2]

			Means of mobile phone ownership		
			Gift	Purchased	Total
Gender	Male	N %	**30_a 25%**	**173_b 71%**	**203 56%**
	Female	N %	**88_a 75%**	**72_b 29%**	**160 44%**
	Sig.				0.000**
	Cramer's V				0.426
	Total	N %	**118 100%**	**245 100%**	**363 100%**
Age	15 – 24	N %	**27_a 23%**	**32_b 13%**	**59 17%**
	25 – 34	N %	**30_a 26%**	**71_a 30%**	**101 28%**
	35 – 44	N %	**32_a 27%**	**92_b 38%**	**124 35%**
	45 – 54	N %	**21_a 18%**	**39_a 16%**	**60 17%**
	54+	N %	**7_a 6.0%**	**6_a 3%**	**13 4%**
	Sig.				0.034*
	Cramer's V				0.171
	Total	N %	**117 100.0%**	**240 100.0%**	**357 100.0%**
Level of education recoded	Tertiary	N %	**4_a 3%**	**18_a 7%**	**22 6%**
	Primary or Less	N %	**12_a 10%**	**20_a 8%**	**32 9%**
	JSS	N %	**52_a 44%**	**112_a 46%**	**164 45%**
	SSS	N %	**50_a 42%**	**95_a 39%**	**145 40%**
	Sig.				0.436
	Total	N %	**118 100.0%**	**245 100.0%**	**363 100.0%**

Source: Researcher's Survey, 2013

5.2 Mode of ownership

A look at table 4 reveals that there were two main means of mobile phone acquisition among the traders, either, self-finance or through the gift culture. Two-thirds of the respondents (67.5%) bought their handsets themselves. However, a critical look at the table shows that females were

[2]Note: Values in the same row and sub table not sharing the same subscript are significantly different at p< 0.05 in the two-sided test of equality for column proportions. Tests assume equal variances.[1]
Tests are adjusted for all pairwise comparisons within a row of each innermost sub table using the Bonferroni correction.
*. The Chi-square statistic is significant at the 0.05 level. ** Significant at 0.01.

more likely than males to acquire their handsets as gifts than through self-finance, with more than three-quarters (75%) of the female respondents received their handsets as gifts. Males on the other hand were more likely to self-finance their handsets than females, recording 71% of all males. A chi-square p-value of 0.00 confirms that there is a statistically significant relationship between gender and the means of mobile phone acquisition. Additionally, to establish what amount of variation in mode of mobile phone acquisition a Cramer's V (0.426) value was obtained. This confirms that Gender is strongly associated with the mode of mobile phone acquisition.

Another major point of reference for mobile phone studies is the fact that there is a general agreement across most studies that young people and adults use mobile phones differently (Castells et al., 2004; Geser, 2006; Ling, 2006; Lim, 2010). Consequently, it is important to consider the relationship between the ages of respondents and the means of ownership. A significant percentage of traders aged below 25 years got their mobile phone as a gift (23%) as compared to 13% who self-financed the purchase of their handset. There is however, no significant difference for those aged 25 to 34 years. This changes as age increases to 35 and 44 years. Traders in this age group were more likely to purchase (38%) their handsets than obtain them as gifts (27%). There is however, no significant difference in the mode of handset acquisition for traders aged 45 and 54 years and above (see table 4). The chi-square value with a p-value of (0.034) further confirms a significant relationship between age and mode of mobile phone acquisition. However, although there is a relationship, this relationship is weak as confirmed by Cramer's V of 0.171. For educational level, there was no significant difference in the mode of ownership across all levels of education.

5.3 Factors that affect the uptake of a mobile phone

Mobile phones were imprinted with their own features. In order to understand the biographies of the mobile phone, it is imperative to do that exploration through the eyes of the features that mobile phones possesses and how influential they were in the uptake of mobile phones by the traders.

5.3.1 Owning Current Handset

To achieve this, the study examined what features of the mobile phone finally convinced the respondents to make a decision to own one, especially with the current handset. This section goes a step further by establishing the demographic differences across these factors. It continues by exploring the relationship between these factors and the demographic characteristics. From the respondents view, four main issues pushed them to decide getting their current handset.

Table 5: Demographic Characteristics and Key Deciders for Owning Current Handset[3]

		What convinced you to own your current handset													
		Previous faulty handsets		Improved functionality		to be trendy		Aesthetics (Design / colour)		No room for choice because it was a gift		Other		Total	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
Age	35 and above	**124_a**	**55**	**35_a**	**16**	**3_a**	**1**	**10_a**	**4**	**26_a**	**12**	**27_a**	**12**	**197**	**100**
	Below 35	**69_b**	**33**	**64_b**	**31**	**17_b**	**8**	**11_a**	**5**	**30_a**	**14**	**19_a**	**9**	**160**	**100**
	Total	**193**	**44**	**99**	**23**	**20**	**5**	**21**	**5**	**56**	**13**	**46**	**11**	**357**	**100**
	X^2 *(df)*	**52.412(6)***													
Education	Below SHS/SSS	**120_a**	**50**	**38_a**	**16**	**8_a**	**3**	**14_a**	**6**	**30_a**	**13**	**29_a**	**12**	**196**	**100**
	SHS/SSS and above	**76_b**	**38**	**63_b**	**31**	**12_a**	**6**	**7_a**	**4**	**27_a**	**13**	**17_a**	**8**	**167**	**100**
	Total	**196**	**44**	**101**	**23**	**20**	**5**	**21**	**5**	**57**	**13**	**46**	**10**	**363**	**100**
	X^2*(df)*	**28.959(6)***													
Marital Status	Married	**$110_{a,b}$**	**50**	**40_a**	**18**	**8_a**	**4**	**8_a**	**4**	**29_a**	**13**	**24_a**	**11**	**192**	**100**
	No relationship	**$39_{a,c}$**	**36**	**35_b**	**32**	**8_a**	**7**	**6_a**	**6**	**14_a**	**13**	**7_a**	**6**	**81**	**100**
	Once married	**36_b**	**55**	**$9_{a,c}$**	**14**	**2_a**	**3**	**5_a**	**8**	**8_a**	**12**	**5_a**	**8**	**50**	**100**
	Stable relationship	**11_c**	**23**	**$17_{b,c}$**	**35**	**2_a**	**4**	**2_a**	**4**	**6_a**	**13**	**10_a**	**21**	**40**	**100**
	Total	**196**	**44**	**101**	**23**	**20**	**5**	**21**	**5**	**57**	**13**	**46**	**10**	**363**	**100**
Gender	Male	**103_a**	**51**	**76_b**	**37**	**17_a**	**8**	**9_a**	**5**	**22_a**	**11**	**24_a**	**12**	**203**	**100**
	Female	**93_a**	**58**	**25_a**	**16**	**3_b**	**2**	**12_a**	**8**	**35_b**	**22**	**22_a**	**14**	**160**	**100**
	Total	**196**	**54**	**101**	**28**	**20**	**6**	**21**	**6**	**57**	**16**	**46**	**13**	**363**	**100**
	X^2*(df)*	**40.505(6)***													

Source: Researcher's Survey, 2013

[3]Note: Values in the same column and sub table not sharing the same subscript are significantly different at p< 0.05 in the two-sided test of equality for column proportions. Tests assume equal variances. Tests are adjusted for all pairwise comparisons within a row of each innermost sub table using the Bonferroni correction. * p < 0.001

According to Table 5, more than half (54%) of the respondents were convinced to get a new handset because of their previous faulty handsets. About one third (28%) chose to own a new handset because they wanted improved functions while 6% apiece decided on a new handset because of the handset's aesthetic features and for trendy reasons. However, 16% had no option of choice because they got the handsets as gifts. Aesthetics and the trendy nature were the least of reasons for the traders to own their current handset while previous faulty handsets and the need for improved handsets together account for 82% of handset based factors for choosing current handset. Evidently, two key factors accounted for the traders owning their current handsets. These can be grouped into mandatory and choice based factors. The mandatory reasons explain why the replacement of faulty handsets was the dominating factor. However, others still went ahead to get their current handsets, though their previous handset was not faulty. On this basis, we can conveniently say that for the respondents, the most important reason for acquiring their current handset is first to replace a previously faulty handset and second for improved functions. These factors were further interrogated by looking at the association between age, gender, level of education and marital status and the decision to own a particular handset.

5.3.2 Age and Handset ownership decision

According to Table 5, 53% of those aged below 35 years owned their current handset for reasons that had to do with the features of the mobile phone handset, be it trendy, improved functions or the perceived aesthetics of the handset. This is consistent with the general population of younger mobile phone users from other regions of the world where owning the most current handset based on the improved features is symbolic of being accepted into ones peer group (Geser, 2004; Castells et al., 2004; Lim and Soon, 2011). A closer observation in the field showed this was more pronounced for those aged 15 to 24 years. However, 55% of those

aged 35 years and above discarded their phones due to their faulty nature. Evidence from the in-depth interviews and observations confirmed that these were the same handsets that were given away as gifts to other prospective users, especially, those above the ages of 45 and below 15 years. Agya Appiah, a 47 year old male trader confirms by pointing out that:

> "I have changed several handsets over the years, the first time, I gave my old Nokia 3310 to my mother so that I can always call to check on her."

Manu adds that:

> "There is always a mobile phone handset at home for my boys to use when they return from school and they want to get in touch with me. The current one at home is my old Tecno."

However, for purposes of undertaking a test of association the categories of ages were re-categorized into two groups, those younger than 35 years and those older than 34 years. A Z test of significance ($p<0.001$) was then conducted. Table 5 shows that respondents under the age of 35 years were more likely than all other age groups to choose a handset for non-mandatory reasons such as the want for improved functionality, the trendy, and aesthetics nature of the handset. On the other hand, those above the age group of 34 were more likely to choose a handset due to the dysfunctional nature of their previous handsets. This was so because a greater proportion of those aged 35 years and above (55%) than those younger (33%) changed their handsets for a mandatory reason such as a previous broken handset (see Table 5). This goes to show that replacing dysfunctional handsets is more of a concern for those older than 34 years, as a result, those older than 34 years and elderly adults were more likely to wait until their handsets were dysfunctional before they changed them. A dysfunctional handset includes broken screen, missing buttons of keypads, broken handset housing, broken mouth and earpiece, inaudible ringtone and a handset with low radio signal receiver. This is an indication that older users were not so keen on improved handset features, as long as the mobile phone can play its basic function

of making and receiving calls adequately, then the mobile phone handset needs not be replaced. However, anything that thwarts the handset's basic function calls for the handset to be changed. They were consequently only forced to abandon their handsets the moment they realize they were dysfunctional. Alternatively, those aged 34 years and below (younger respondents) were more likely than older respondents to abandon their handsets even if they were functional but lack better features. Additionally, trendy reasons for owning their current handset was more significant for those younger.

This aspect of the biography of the mobile phone throws several things into focus on the uptake of the mobile phone, first, as a gadget and then as a communication tool. Respondents of this study have shown that the mobile phone has a dual purpose as a gadget and a tool for multiple purposes. Issues emanating from both purposes play significant roles in the uptake of a particular handset over the other. These significant roles were age dependent (X^2=**52.412, p<0.001**) with younger traders more concerned with improved functionality over the mere replacement of a handset because it is dysfunctional. This matters very little for those older traders (above 34 years) as they were compelled to acquire their current handset because of the dysfunctional status of their previous one. All this implies that the design of the gadget plays a significant role for both young and old traders. However, it is more significant for those who were younger. Consequently, by looking at the biography of the mobile phone starting with the current handset owned we glean that while the design of the handset plays a significant role in the uptake of a particular mobile phone it is more a feature for younger owners of the handset. For older owners, this happens only when a previous handset is dysfunctional. Age might not be the only factor with significant differences in taking up a handset. Let us now consider gender.

5.3.3 Gender and Handset ownership decision

This section focuses on the gender differences that exist in terms of the traders' decision to own their current handset. Table 5 further throws more light on this. To begin with, like the age discussion earlier, 54% of the respondents chose their current handset because their old ones were faulty. This cuts across both gender groups with 51% of male and 58% of female respondents confirming this. Although female respondents were 7% more likely to buy a new handset due to the faulty nature of their previous one this difference is not significant. Additionally, more than one third (37%) of male traders as against 16% of female traders changed their handsets because they wanted improved features. A Z proportion test further confirmed that male respondents were more likely than female respondents to change handsets for want of improved features. Male respondents (8%) were also significantly more likely to change handsets because they wanted to be trendier than their female (2%) counterparts. Although 8% of females wanted their current handsets for aesthetic reasons this was not significantly different from 9% of males who wanted their device for the same reason. Finally, female (22%) respondents were significantly more likely than male (10.8%) respondents to have received their handsets as gifts, as a result, they had no choice in the form of handset they needed. This section shows that where respondents have the option of choosing a handset, males differ from female respondents when it has to do with the need to have improved features and to be trendy. Males were significantly more likely than females to choose on the bases of improved functionality and the trendiness of the handset (X^2= **40.505, p<0.001**), even though the majority of both males and females decided to own their current handset first because they wanted to replace a previous faulty handset before any other purpose is considered. A closer look at the table shows that this relationship is largely as a result of the significant gender difference for

other reasons with the exception of replacing faulty handsets. Once again, based on the biography of the mobile phone we realize that although both male and female traders take up their current mobile phone for the basic reason of replacing their previous faulty handsets, male respondents were more likely than female respondents were to abandon their previous handsets for a new handset with improved functionalities or to stay trendy.

5.3.4 Level of education and decision to own current handset

On the role of education in making the decision to own one's current handset Table 5 shows that almost half (47%) of the respondents with tertiary education bought their current handset because they wanted improved or better features. Nineteen percent chose it because they wanted a trendy handset. Another 16% only wanted a handset because their previous handset was broken. This shows that among those with tertiary education the three top reasons for owning their current handsets, in the order of importance, were improved functionality, trendy nature of the handset and finally, just to replace their broken handset. A whopping 75% abandon their previous handset for reasons other than the dysfunctional status of these handsets. The handsets they replace were often re-usable by other groups who often re-possess them in the form of gifts.

Those with all other levels of education put more premium on just replacing their handset because their previous ones were spoilt. For instance, among those with no education a convincing majority (80%) replaced handsets that were spoilt with those with primary to JHS education reporting 64% and 60% respectively. Additionally, close to half (49%) of those with SSS education agreed with same. This is confirmed by the Z-test of proportions across all the categories. This shows that only those with tertiary level education were significantly likely to change a handset for reasons other than replacing their faulty handsets.

To help assess the relationship between education and the uptake of their current handset, educational levels of the respondents were re-categorized into two main categories - below SSS, and SSS and above. A Z-proportional test of significance showed that, while those with educational levels lower than SSS were more likely to own their current handset because they wanted to replace their previous faulty handset, those with SSS and above educational levels were more likely to replace their previous handset with one that has improved functions. What therefore draws those with "SSS and above" education to abandon their handset has more to do with the need for improved features than the mere replacement of a broke handset. A chi-square test further confirms this relation ($\mathbf{X^2=28.959, p<0.001}$). This can be partly explained by the fact that those with educational levels from SSS and above were more prone to these demands for functionality because increasingly handsets were exhibiting features and functions of basic computing and as a generation exposed to computers they surely will value improved features in handsets than those with lower education. The biography of the handset has once again shown that depending on how high ones education is the mobile phone handset will be abandoned when they have finished serving their purpose in the lives of the owners. However, purpose means different things to the respondents depending on their educational levels. For those with lower education this happens when the handset becomes dysfunctional, for those with higher education this happens when they were seeking handsets with improved functions.

5.3.5 Marital Status and decision to own current handset

With the exception of those who were once married and those still married, the majority of these in other categories of marital status owned their handsets based on reasons other than abandoning their former dysfunctional handsets. For instance, for those in "no relationship",

close to two third (64%) bought their current handset because they wanted improved features, to be trendy, for aesthetic reasons or had them as gifts or for other reasons. This is not too different from those who were in a stable relationship where more than two-thirds changed handsets for improved features or aesthetic reasons. A closer look at the table reveals that traders who were once married (55%) were more likely to choose a new handset because of their previous faulty handsets than those who were in no relationship (36%) or in stable relationships (23%). However, no significant difference was found between those who were married and "once married". For those who decided to own a handset because they wanted improved features, an obvious significant difference exists across all marital categories. Those who were in no relationship (32%) were more likely to choose a handset based on the need for improved features than those who were married (18%) or those who had once been married (14%). Additionally, those in stable relationships (35%) were more likely than those married (18%) to buy a handset because of improved functionality.

This shows that for those who were married or once married the decision to own their current handset was largely because their previous handset was dysfunctional. This can be attributed to the fact that the majority of those married or once married were likely to be older than 30 years; it is therefore likely that they will also not abandon their handsets unless they were dysfunctional. Additionally, because those in stable relationships and no relationships were much younger in age than those married, they were also more likely to abandon their previous handset so as to enjoy one with improved features. Another possible explanation could be that being married demands a greater level of control over ones expenditure consequently, changing a handset will be restricted to only when the handset is dysfunctional.

5.4 Length of ownership

The following section focuses on the association between age, gender, level of education and marital status of respondents and the number of years they have been mobile phone users, the number of handsets they have changed over the years, and the number of handsets they currently own. The purpose of exhibiting this data is to find out if there were any significant differences between the socio-demographic characteristics and the length of years they have been owners. In the views of Rogers (2003), a key element in determining the adoption model is the length of time in owning the said innovation. There is also the need to know the number of handsets traders have changed over the years and why as well as the number of handsets they currently own. We proceed by looking at the first socio-demographic characteristic, the ages of the traders.

Table 6: Demography and Handset ownership History[4]

		Length of owning mobile phone			Number of Handsets changed			Number of Handsets owned		
		M	SD	Max	M	SD	Max	M	SD	Max
Age	15 – 24	**6_a**	**3**	**15**	**$6_{a,c}$**	**4**	**20**	**1_a**	**1**	**3**
	25 – 34	**9_b**	**4**	**20**	**8_b**	**5**	**20**	**1_a**	**1**	**4**
	35 – 44	**10_b**	**4**	**18**	**$7_{a,b}$**	**4**	**30**	**1_a**	**1**	**3**
	45 – 54	**11_b**	**4**	**22**	**$5_{a,c}$**	**4**	**20**	**1_a**	**0**	**2**
	54+	**9_b**	**4**	**15**	**3_c**	**1**	**5**	**1_a**	**0**	**2**
	Total	**9**	**4**	**22**	**6**	**4**	**30**	**1**	**1**	**4**
Level of Education completed	Primary or less	**$10_{a,b}$**	**5**	**17**	**5_a**	**4**	**16**	**1_a**	**0**	**2**
	JSS/JHS	**9_b**	**4**	**20**	**6_a**	**4**	**20**	**1_a**	**1**	**3**
	SSS/SHS	**$9_{b,c}$**	**4**	**18**	**6_a**	**4**	**20**	**1_a**	**0**	**3**
	Tertiary	**12_a**	**6**	**22**	**10_b**	**7**	**30**	**2_b**	**1**	**4**
	Total	**9**	**4**	**22**	**6**	**4**	**30**	**1**	**1**	**4**
Marital Status	Married	**10_a**	**4**	**22**	**6_a**	**4**	**30**	**1_a**	**1**	**3**
	No relationship	**7_b**	**4**	**15**	**6_a**	**3**	**20**	**1_a**	**1**	**4**
	Once married	**$9_{a,c}$**	**4**	**18**	**6_a**	**4**	**20**	**1_a**	**0**	**2**
	Stable relationship	**$8_{b,c}$**	**5**	**20**	**8_a**	**6**	**20**	**1_a**	**1**	**3**
	Total	**9**	**4**	**22**	**6**	**4**	**30**	**1**	**1**	**4**
Gender	Male	**9_a**	**4**	**22**	**7_a**	**4**	**30**	**1_a**	**1**	**4**
	Female	**9_a**	**4**	**18**	**5_b**	**4**	**20**	**1_b**	**0**	**3**
	Total	**9**	**4**	**22**	**6**	**4**	**30**	**1**	**1**	**4**

Source: Researcher's Survey, 2013

A look at Table 6 shows that the average mobile phone user has been a user for 9 years, with the longest using mobile phone owner having been doing so for 22 years. This means that on the average, the usage of the technology coincided with the period that the mobile phone increasingly became visible in the Ghanaian society (ITU, 2012; NCA, 2006; NCA, 2008; NCA, 2010), especially in the urban centres of the country. With almost a decade of experience under their wings as users, these traders were more than equipped to express the perceived changes that they have experienced with the changing phase of mobile phone use.

[4] Note: Values in the same row and sub table not sharing the same subscript are significantly different at $p < 0.05$ in the two-sided test of equality for column proportions. Tests assume equal variances.[1]
1. Tests are adjusted for all pairwise comparisons within a row of each innermost sub table using the Bonferroni correction.

A closer look at the same table shows that respondents below the age of 25 years who have had an average of 6 years of usage with a lesser variation (SD=3). A t-test across the categories of ages shows that there is a significant difference between those above the age of 24 years and those below it. This shows that on the average the traders above the age of 24 years have used mobile phones significantly longer than those below the 24 years. With an average usage of 9 years, it is now possible to take a look at the number of handsets changed over the years.

Table 6 shows that over the 9 year period, traders have changed on average 6 handsets translated into 0.7 handsets per year. The only age group that has had more handsets than the average of 6 were those aged 25 to 34 years with an average of 8 handsets. However, only those below 25 years change handsets more frequently per year than any other age group, on the average one handset per year (an average of 6 handsets over 6 years). This is followed by those aged 25 to 34 years (0.8 per year), 35 to 44 years (0.7 per year), 45 to 54 years (0.45 per year) and finally those older than 54 years (0.33 per year). This shows that those younger than 35 years were more likely to change handsets in a year than any other age group. The frequency of handset change decreases as the ages of the respondents increases. Currently, on the average the traders own one handset with the highest number of handsets owned by anyone being four. This statistic can be misleading because a number of the handsets take more than one SIM card. Consequently, though the average number of handsets currently owned may be one, in a practical sense they could function as more than one handset.

The table further addresses the gender difference between the traders' frequency of handset changes. As shown in the table, although both male and female traders on the average have used mobile phones for the same number of years, male (7) respondents tend to have changed more

handsets over the years than their female (5) counterparts. Male traders also change handsets more often than the total average: this is corroborated by earlier findings (see Table 4) since more female traders than male traders receive their handsets as gifts.

Looking at the same set of variables across all educational levels of the traders, the table shows that only those with tertiary and primary or less educational levels have used mobile phones longer (12 and 10 years respectively) than the general average of 9 years. However, only those with higher education change their handsets significantly more frequently per year (0.83) than those with JSS/JHS (0.67), SSS/SHS (0.67) and Primary or less education (0.5) levels. Additionally, those with high education significantly own more handsets (M=2) currently than all other categories of education who have a general average of one (1). This shows that not only do traders with higher education change their handsets more frequently, but they also own more handsets at a time than those in all other categories of education.

In terms of marital status, those married, have used mobile phones for significantly longer years (M=10) than those in stable relationship (M=8), no relationship (M=7), who have used phones for an average of 9 years. However, this was not too different from those who had once been married (M=9). Alternatively, only those in stable relationships change their handsets more frequently (1 per year) than those in no relationship (M=0.86 per year), once married (M=0.67 per year) married (M=0.6 per year).

The table makes it possible to take this analysis a step further by considering the number of handsets that the traders have changed over the years.

5.8.1 Reasons for change in Handsets over the years

It is obvious from the above discussions that most of the traders change their handsets at least once every year. It is important to explore this question because a number of the reasons given for the extensive visibility of mobile phone handsets in Africa rank the influx of cheaper handsets, the availability of used handsets and the role of handset repairers as the most influential. It is therefore not surprising the frequency with which people now change handsets. Prior to this, the culture of sharing handsets within domestic and public spaces was the norm (Castells et al., 2004; Hahn & Kibora, 2008). Although sharing of handsets is still being practiced, the frequency has reduced at least among the respondents in this study. This is confirmed by the frequent nature of handset change over the years. We now proceed to consider the bases of these frequent handset changes by examining the association between the socio-demographic characteristics and the reasons for changing handsets.

Table 7: Association Demography and Reasons for changing handsets[5]

		Reasons for changing handsets							
		Faulty handsets N (%)	Improved functionality N (%)	Trendy (to increase social status) N (%)	Aesthetics (beauty based on design or colour) N (%)	Got stolen N (%)	Other N (%)	Total N (%)	(Odds Ratio)
Gender	Male	**151_a (41)**	**54_a (15)**	**28_a (8)**	**21_a (6)**	**108_a (29)**	**10_a (3)**	**203 (100)**	**0.68**
	Female	**129_a (54)**	**13_b (6)**	**9_b (4)**	**7_b (3)**	**66_b (28)**	**13_a (6)**	**160 (100)**	**1.19**
	Total	**280 (46)**	**67 (11)**	**37 (6)**	**28 (5)**	**174 (29)**	**23 (4)**	**363 (100)**	**1.75**
	X^2 (Cramer's V)								**39.935**(0.33)**
Age	35 and above	**160_a (53)**	**21_a (7)**	**6_a (2)**	**14_a** (5)	**93_a (31)**	**11_a (4)**	**197 (100)**	**1.1**
	Below 35	**114_b (39)**	**44_b (15)**	**31_b (11)**	**14_a (5)**	**81_a (27)**	**12_a (4)**	**160 (100)**	**1.5**
	Total	**274 (46)**	**65 (11)**	**37 (6)**	**28 (5)**	**174 (29)**	**23 (4)**	**357 (100)**	**1.4**
	X^2 (Cramer's V)								**48.352**(0.37)**
Education	Below SHS/SSS	**156_a (46)**	**30_a (9)**	**20_a (6)**	**15_a (5)**	**106_a (32)**	**9_a (3)**	**196 (100)**	
	SHS/SSS and above	**124_a (45)**	**37_a (14)**	**17_a (6)**	**13_a (5)**	**68_b (25)**	**14_a (5)**	**167 (100)**	
	Total	**280 (46)**	**67 (11)**	**37 (6)**	**28 (5)**	**174 (29)**	**23 (4)**	**363 (100)**	
	X^2 (Cramer's V)								**12.907*(0.19)**

Source: Researcher's Survey, 2013

[5] Note: Values in the same column and sub table not sharing the same subscript are significantly different at p< 0.05 in the two-sided test of equality for column proportions. Tests assume equal variances.[1]

1. Tests are adjusted for all pairwise comparisons within a row of each innermost sub table using the Bonferroni correction.

From Table 7, one can easily glean that the leading reason for the frequent change of handsets for the traders is the breakdown in previous handsets with almost half (46%) of the respondents identifying with this. In-depth interviews further revealed that although there were handset repairers, most people refuse to repair their broken handset due to past bad experience with repaired handsets. Kwame, who is in his early 40s, points out that:

> "Sometimes when it (mobile phone handset) becomes faulty I don't like to repair it because even if I do it gets damaged again over a short period of time so I just get a new one to replace it."

Mussa, who is also in his 50s, adds that:

> "…when I feel the cost of repairing is much more than the cost of a new phone I just go ahead and get a new one."

As reported, most repaired handsets never function properly and were subject to constant breakdowns. Consequently, respondents prefer to purchase new handsets than choose to repair broken handsets or purchase used handsets also known as 'second-hand' – the practice of early days' mobile phone usage in Ghana (Hahn & Kibora, 2008) and other parts of Africa. Additionally, one third of the traders attributed their frequent changes in handsets to theft. This makes theft the second reason for the frequent change of handsets. This implies that for the traders issues such as the need for improved functions of new handsets, the trendy nature, as well as the aesthetic design of new handsets has very little influence on their decisions to change handsets over the period. Further, this also implies that the cost of handsets alone does not explain the frequency of handset change, thereby contradicting the literature on cheaper mobile phones (Castells et al. 2007; Hahn & Kibora, 2008)

A closer look at Table 7 shows the gender differences in these reasons. The table confirms that both genders equally rank their previous faulty handsets as the top most reason for changing their handsets over the years. However, male respondents were significantly more likely to have changed handsets over the years as a result of their previous handset being stolen, the need for improved functions, to be trendy, and finally for the aesthetic features of their new handsets. A chi-square test **(X^2 = 39.935, p<0.001)** with a Cramer's V of 0.33 confirms a strong relationship between gender and the reason for changing handsets over the years. The odds value for a male to change his handset because of a previous faulty handset is 0.68 meaning males were 0.68 times more likely to change handsets because of previous broken handsets. The odds for a female trader is 1.19 which means that a female is 1.19 times more likely to change handsets as a result of previous faulty handsets. Consequently, the odds ratio value of 1.75 shows the odds that a female trader changes the handset because of previous broken handsets is almost twice as great as the odds that a male trader changes the handset as a result of previous broken handsets. This is probably due to the fact that females tend to own their handsets as gifts, as such, changing their handsets might not be solely their decision. I now proceed to consider the differences across the different age groups of the traders.

Table 7 reveals that across all ages, the top three reasons for replacing handsets over the years were previous dysfunctional handsets (46%), theft (29%) and improved features in current handsets (11%). Some also attribute these changes to the need to be trendy (6%), and for the aesthetic features of the new handset (5%). However, those older than 34 years were more likely (53%) to attribute changes in their handsets to their previous dysfunctional handsets than those younger than 35 years (39%). On the contrary, those younger than 35 years significantly attribute changing handsets to the need to have improved features in new handsets. Additionally, younger

traders were also significantly (11%) concerned with staying trendy as a reason for handset change in the past than older traders (2%). Both age groups equally agreed to changing handsets as a result of theft, and for aesthetic reasons. A chi-square test (X^2 = **48.352, p<0.001)** further confirms that there is a relationship between age and reasons for changing handsets over the years. A Cramer's V of 0.37 also confirms a strong association between the two variables, meaning age explains 37% of the variation in the reason for changing handsets over the years. The odds ratio (1.4) further shows that the odds for those above 34 years to change handsets over the years as a result of the previous dysfunctional handset is close to one and a half times as great as the odds of a younger trader changing handsets due to the same reason. We now proceed to consider the association between education and the reasons for changing handsets.

From table 7 it is clear that like the previous tables there is no difference in terms of the representation for the leading reasons for changing handsets over the years. However, unlike the earlier tables, there is no significant difference between those with less than SHS/SSS education and those with SHS and higher education in terms of the reasons for the changes in handsets over the years with the exception to the theft. For instance, close to half of the responses from both groups identified the need to replace previous faulty handsets as the reason for changing handsets over the years. However, close to one-third (32%) of responses from traders with educational level lower than SHS/SSS attributed the changes to theft as against one-fourth (25%) of traders with higher education. This shows that theft is more of an issue for those with educational levels below SHS/SSS. Across the other minor reasons such as aesthetics and trendy nature of the handset, no significant differences were recorded. A chi-square test (X^2 = **12.907, p<0.05)** confirms there is a relationship between the traders' level of education and reasons for changing

handsets. However, based on the Cramer's V of 0.19 one can conclude the said relationship is weak consequently an odds ratio was not necessary.

5.5 Mobile phone household ownership history and Sources of mobile phone ownership influence

Establishing the mobile phone household ownership environment is an essential part of the commodification, imagination and appropriation stage of the domestication of the mobile phone amongst these traders. In the views of Silverstone et al. (1994) the element that introduces people in their domestic space to a technology is the role that designers and advertisers play in transmitting the ideas about the technology to the society. Ling and Donner (2008) further adds that the relations of prospective users also assist in "planting" ideas about these gadgets into the minds of potential users, thereby making them desire and take-up such objects. Considering that the trading space of the traders and that of their private space like the household were not entirely separate and different, understanding the history of their household ownership context will help us place their own ownership and need for a mobile phone into the appropriate context. There is therefore the need to examine the traders' household history of mobile phone ownership and explore the possible relationship that exists with the various socio-demographic characteristics.

Table 8: Demography and History of Household Mobile Phone Ownership [6]

		Who owned the first mobile phone in your household														How long has the person been using a mobile phone?		
		Self		Partner		Child		Father		Mother		Extended family memb.		Total				
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	M	SD	Max
Gender	Male	**119_a**	**59**	**5_a**	**3**	**0^1**	**0**	**43_a**	**21**	**4_a**	**2**	**32_a**	**16**	**203**	**100**	**10**	**5**	**22**
	Female	**50_b**	**31**	**54_b**	**34**	**10_a**	**6**	**29_a**	**18**	**7_a**	**4**	**10_b**	**6**	**160**	**100**	**11**	**5**	**21**
	Total	**169**	**47**	**59**	**16**	**10**	**3**	**72**	**20**	**11**	**3**	**42**	**12**	**363**	**100**	**11**	**5**	**22**
	X^2 (Cramer's V)	**39.935**(0.33)**																
Age	35 and above	**116_a**	**59**	**46_a**	**23**	**10_a**	**5**	**13_a**	**7**	**1_a**	**5**	**11_a**	**6**	**197**	**100**	**11**	**4**	**22**
	Below 35	**50_b**	**31**	**13_b**	**8**	**0^1**	**0**	**57_b**	**36**	**10_b**	**6**	**30_b**	**19**	**160**	**100**	**11**	**5**	**22**
	Total	**166**	**47**	**59**	**17**	**10**	**3**	**70**	**20**	**11**	**3**	**41**	**12**	**357**	**100**	**11**	**5**	**22**
	X^2 (Cramer's V)	**48.352**(0.37)**																
Education	Below SHS/SSS	**96_a**	**49**	**40_a**	**20**	**8_a**	**4**	**25_a**	**13**	**4_a**	**2**	**23_a**	**12**	**196**	**100**	**11**	**4**	**22**
	SHS/SSS and above	**73_a**	**44**	**19_b**	**11**	**2_a**	**1**	**47_b**	**28**	**7_a**	**4**	**19_a**	**11**	**167**	**100**	**11**	**5**	**22**
	Total	**169**	**47**	**59**	**16**	**10**	**3**	**72**	**20**	**11**	**3**	**42**	**12**	**363**	**100**	**11**	**5**	**22**
	X^2 (Cramer's V)	**12.907*(0.19)**																

*p<0.05 **p<0.001

Source: Researcher's Survey, 2013

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Note: Values in the same column and sub table not sharing the same subscript are significantly different at p< 0.05 in the two-sided test of equality for column proportions. Tests assume equal variances.[2]

1. This category is not used in comparisons because its column proportion is equal to zero or one.
2. Tests are adjusted for all pairwise comparisons within a row of each innermost sub table using the Bonferroni correction.

Table 8 shows that close to half (47%) of the traders were the first to have introduced the mobile phone into their households. For one-fifth of the respondents their father was the one who began using a mobile phone, another 17% identified their partner as the first to have started using the handset. Finally, 12%, 3%, and 3% picked their other relations, mothers, and children respectively as the first to have used the handset in their households. The Table further reveals that on the average the households of the traders' first came into contact with the handset within the household space 11 years ago with 50% of these households having had access to these handsets for at least 10 years. Additionally, the Table shows that the time frame for the mobile phones' introduction into the household space ranges between 1 and 22 years. This clearly shows that while there were some early adopters of the mobile phone, especially, with those households who have used it for 10 years and more, there were some late adopters, especially those under 10 years. The next aspect to explore is the socio-demographic differences in the introduction of the handset to the household of the traders beginning with age.

Table 8 further shows that, although the general agreement for close to half of the traders is that they were the ones who introduced the mobile phone into their household context, this is more significant for those who were 35 years and older (59%) than those younger (31%). This shows that among the age groups, those older than 34 years were more likely to have introduced the mobile phone to their household than those younger than that. This, however, changes for those who identified their father as the one who introduced the mobile phone to the household: a significant number of those below 35 years (36%) attributed their first contact to a mobile phone to their father more than those older (7%). This is not different from those that identified their mother as the source of introduction. It is therefore not surprising that a convincing majority of

those below 35 years identified a close family relation to have been the first to use a mobile phone in their household. This can largely be attributed to the fact that the mobile phone became easily accessible to increasing numbers of people in Ghana only after the year 2000. It was only in 2005 that the prices of handsets dropped significantly. Consequently, the only people who were employed could afford to own and manage a mobile phone before the 2005. Looking at the age groups, those older than 35 years were more likely to have been employed during that period of the emergence of the mobile phone in Ghana. Therefore, it is natural that older users who have used the mobile phone the longest were the likelier group to have introduced the mobile phone into their household context, especially when they had the wherewithal to purchase and manage a handset at the time.

A chi-square significant value of 48.352 ($p<0.001$) further confirms there is an association between age and the introduction of the mobile phone into the household space. A Cramer's V of 0.37 further shows a strong association between age and the introduction of the mobile phone in the domestic space. This shows that age is a significant factor in explaining the introduction of the mobile phone in the traders' household context confirming the dominance of older traders, and fathers as the source of that introduction. This also suggests some possible gender differences. The following section explores this further.

Table 8 enables us to explore the gender differences in the agent who introduced the handset into the household. A look at the table shows that for male respondents, more than half (59%) of them were the ones who first introduced the mobile phone into their households, however, only one third (31%) of female respondents were able to do same. This shows that male traders were more likely than female traders were to be the first to introduce the mobile phone into their

household; and the partners of female traders (34%) more than that of male traders (3%) were more likely to have been the first to introduce the mobile phone into the household space of the traders. This confirms that male respondents were more likely than female respondents to be "innovators" and "early adopters" of the mobile phone. A chi-square value of 39.935 ($p<0.001$) confirms there is a relationship between gender and the history of mobile phone ownership. Additionally, a Cramer's V of 0.33 shows a moderate association.

Additionally, a significantly larger number of male respondents (16%) than female traders (6%) confirmed that other extended relations were the ones to have introduced the handset into their domestic space for the first time. Finally, female traders (6%) significantly encountered the mobile phone handset within the household for the first time through their children more than male traders (0%). This reveals that cumulatively, female traders experienced the mobile phone in the household for the first time due to the activities of both nuclear and extended family relations who were males. On the other hand, for the male traders, extended family members introduced them to the mobile phone.

On the average, those who introduced the mobile phone into the household of the male respondents for the first time have been using the mobile phone for 11 years, while those of the female household space have been using it for a year more. For both groups half of those who introduce the mobile phone into their domestic space the longest have used it for more than 10 years, ranging between 1 and 22 years for male respondents' household and 1 to 21 years for female respondents' household. This confirms female respondents were less likely to have been the first in their household to use a mobile phone for the first time.

The same table shows that for those with educational levels lower than SHS/SSS, 49% identified themselves as the first to introduce the mobile phone into their household; 20% said it was their partner, followed by another 13% who pointed to their fathers as the source. Another 12% identified their siblings or other relatives, only 4% and 2% selected their child and mother respectively for using the mobile phone in their household for the first time. This shows that for those with lower education, 51% of them cumulatively identified other family relations as those who introduced the mobile phone into their household context with their partners and father being the top two relatives to introduce the mobile phone into that context.

With regards to education, 44% of those with educational levels at SHS and above identified themselves as the ones who introduced the mobile phone into their household and this is 5% less than those with a lower education although not proportionally significant. Another 28% also pointed to their fathers this was however more significant for those with higher education. Some also pointed to their partners (11%) although this was significantly less than those who chose same for those with lower education (20%). The same proportion also chose their siblings or other relatives for introducing their household to the mobile phone. However, mothers and children were the least chosen 4.2 and 1.2%s respectively. This shows that for those with higher education, apart from themselves, their fathers, partners and other relatives were influential in introducing the mobile phone into their households. However, while fathers were more significant for those with higher education, partners were more significant to those with lower education for bringing the mobile phone into their household context.

The next aspect under the appropriation stage to consider is the feature of the mobile phone handset that makes traders decide to choose one handset over the other. This will be examined in

connection with the socio-demographic characteristics of the traders. This will help us also to understand the changing decisions in handset uptake over the years. From the works of Castells et al. (2004), Overa (2008), Hahn & Kibora (2008), Donner (2008) and Sey (2011) the key feature of adopting a mobile phone handset over the years was for the basic reason of making and receiving calls. As such, most people from developing nations take up a handset just for the basic reason of making and receiving calls. Once the handset meets such a need the form it takes becomes irrelevant. With the increasing purchasing power of people and the simultaneous flooding of the market by cheaper handsets, it was of interest to find out whether people were still focused on a handset as long as it is viable for making and receiving calls. This section explores the current features of the handset that makes traders choose one handset over the other.

Table 9: Socio-Demographic Characteristics and Pull features of Handset[7]

		Pull Features of the handset																			
		Radio		Torchlight		Camera		Size/ weight		Colour		WiFi / Data access		Calculator		Perceived mobile phone handset quality		Just for calls		Total	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Gender	**Male**	109_a	16	64_a	9	100_a	15	77_a	11	60_a	9	62_a	9	72_a	11	116_a	17	20_a	3	203	100
	Female	70_a	17	42_a	10	52_b	13	43_b	10	34_a	8	19_b	5	43_a	10	81_a	20	32_b	8	158	100
	Total	179	16	106	10	152	14	120	11	94	9	81	7	115	11	197	18	52	5	361	100
	X^2 (Cramer's V)	**50.827**(0.38)**																			
Age	**35 and above**	89_a	16	57_a	10	62_a	11	65_a	12	50_a	9	23_a	4	62_a	11	105_a	19	36_a	7	197	100
	Below 35	90_b	17	49_a	9	88_b	16	55_a	10	43_a	8	57_b	11	53_a	10	88_a	16	16_b	3	158	100
	Total	179	17	106	10	150	14	120	11	93	9	80	7	115	11	193	18	52	5	355	100
	X^2 (Cramer's V)	**61.355**(0.42)**																			
Education	**Below SHS/SSS**	90_a	16	63_a	11	71_a	12	67_a	12	54_a	9	26_a	5	67_a	12	99_a	17	36_a	6	194	100
	SHS/SSS and above	89_a	17	43_a	8	81_b	16	53_a	10	40_a	8	55_b	11	48_a	9	98_a	19	16_b	3	167	100
	Total	179	16	106	10	152	14	120	11	94	9	81	7	115	11	197	18	52	5	361	100
	X^2 (Cramer's V)	**38.950**(0.33)**																			

Source: Researcher's Survey, 2013

[7] Note: Values in the same column and subtable not sharing the same subscript are significantly different at $p < 0.05$ in the two-sided test of equality for column proportions. Tests assume equal variances.[1]

1. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

The Table 9 shows that among the various features of the mobile phone, the most popular amongst the traders is the perceived quality of the handset, receiving 18% of total responses. A look at the educational distribution of this shows that 19% of the responses of those with higher education, 1% more than those with lower education rated the perceived mobile phone handset quality as the top feature they look out for in a handset. The next most important feature is the radio function. According to the Table, the radio feature had the second highest response with 17% of responses. With this, 17% of responses from those with higher education, representing 1% more than those with lower education, chose the radio as the second most important feature. The next important feature following this is the camera, receiving 14% of responses. However, this is significantly (using Z-proportional test, $p<0.05$) more of an essential feature for those with higher education receiving 16% as against 12% of responses from those with lower education. The fourth major feature is the size and weight of the handset, receiving 11% of responses. Although 12% of responses from those with lower education identified this feature, this is significantly different from 10% responses from those with higher education.

The next major feature is the calculator chosen by 11% of responses. While 12% of responses from those with lower education chose the calculator, 9% of respondents with higher education chose the same. This is however not significantly different. The colour of the handset also received 9% of responses with not much of a variation along educational lines. The last but not the least is the WiFi / Data access feature, receiving 7% of all responses. This, however, is more significant for those with higher education with 11% than those with lower education (5%). Finally, only 5% of responses went for a handset as a long as the handset can help in making and receiving calls.

However, those with lower education (6%) were significantly more likely than those with higher education (3%) to pick a handset once the handset can make calls irrespective of other features the handset may or may not have. The top five features the traders look out for before deciding to own one particular handset over the other in the order of importance includes: the perceived quality of the handset, radio, camera, size/ weight, and calculator. The least important features include torchlight, colour, data/WiFi access, and a phone just for calls. With the exception of the camera and data/WiFi features there is no significant level of educational difference across the other features. Both camera and data features were more important for those with higher education.

A chi-square (38.950) p-value of 0.000 further confirms an association between education and the pull features of a handset. A Cramer's v of 0.33 also shows a strong association between the two variables. This clearly shows that the mobile phone ceases to exist for traders as just a tool for making calls, to a tool with multiple features able to fit into the needs of the trader over and beyond the need to make and receive calls. Therefore, one of the social consequences for the ubiquitous status of the mobile phone has to do with how the call function of the mobile phone is now a taken for granted feature of the mobile phone among the traders. This points to the fact that today a mobile phone means something more than a telephone. It is therefore not enough to have a handset that can make and receive calls: it must have the capacity to do more than that.

The age differences in the features that respondents look out for before choosing a particular handset over the other was also explored. A look at Table 9 shows that across the age groups there is a similar representation of features preferred by the respondents in selecting their handsets with perceived mobile phone quality leading the way and a handset just for calls ending

the features. However, a closer look at the age distribution shows that the radio feature (17%) is slightly more important than the perceived quality of the handset (16%) for those younger than 35 years. For those older than 34 years, perceived quality of the mobile phone handset (19%) is the leading feature followed by radio (16%). There is, however, no significant difference between the age groups in terms of the importance of the perceived quality and the radio features of the handset.

The next important feature for the age groups is that of the camera. From the table, while the camera was selected 16% times by those under 35 years, those above 34 years selected it 11.3% times. A Z-test further showed those below 35 years were significantly more likely to choose a handset for its camera feature than those below it. This goes to show that those younger than 35 years ranks the importance of the camera and perceived quality of the mobile phone handset equally. The next important feature of the handset that they identified is the size/weight of the handset. While 12% of the responses of those above 34 years saw this to be important, 10% of those younger than 35 year give it that credence. This is an indication that while the camera is the third important feature for those younger than 35 years, for those older than 34 years, it is their fourth feature with size/weight feature placing third. This confirms that the camera is indeed more important for those younger than 35 years.

The calculator feature is the fifth most important feature they look out for in a handset. While 11% respondents confirmed this for those older than 34 years, 10% of those younger identified with it. For those older than 34 the calculator feature is as important as the camera feature. The next important feature they consider is the torchlight feature. With this 10% of responses from those older than 35 as against 9% the responses from the younger traders saw it as that important.

The next important feature is the colour of the handset. This was chosen 9% times by those older than 34 as against 8% times by those younger than 35 years.

The two least important features were a handset that can only be used for calls, receiving 5% the responses although more significant for those older than 34 years (7%) based on the z proportion test than those younger than 35 years (3%); and data/ WiFi features which also received 7% of responses. However, this is significantly more important to those younger than 35 years (11%) than those older than 34 years (4%) were, based on z test of proportions. However, WiFi/data feature is more important than the colour of a handset to traders younger than 35 years than to those older than 34years. Once again, a mobile phone just for calls is the least important feature irrespective of ones' age. A chi-square p-value of 0.000 further shows that there is a relationship between age and the mobile phone features that the traders purchase. Additionally, a Cramer's V of 0.42 shows a strong association between age and the mobile phone pull features.

Let us now consider the gender differences in these features. The table shows that while both male and female respondents rank perceived mobile phone quality, radio, camera, and size/weight, as 1 to 4 important features they look out for in purchasing a handset camera and size features were more important for males than females in deciding the kind of handset to purchase. Females, however, place the same value on both calculator (10%) and size/weight (10%) features of the handsets.

Again, while the lower tier for female traders consist of torchlight (10.1%), colour (8.2%), just for calls (7.7%) and WiFi/data (4.9%) that of the male respondents consist of calculator (10.6%), torchlight (9.4%), WiFi/data (9.1%) and just for calls (2.9%). a Z test further shows that male traders were significantly more likely than female traders to consider the camera, size/weight and

WiFi/data features of handset before purchasing it while more females (7.7%) than males (2.9%) were significantly satisfied with picking a handset as long as one can make and receive calls with it. A further exploration using chi-square with a p-value of 0.000 and a Cramer's V of 0.38 shows there is a strong relationship between gender and the pull features of the mobile phone handset.

5.6 Influence of others

In the views of the both the domestication theory and the diffusion of innovations, people often decide on owning one object over the other based on the influence of others. At the micro level, this role is often performed by the innovators while, at the individual level as expressed by Ling (2004) this is done by peers and advertisers. Additionally, for artefacts that will be solely used in the domestic space, family members play as significant a role as the significant others. The mobile phone as an artefact presents a unique case. This is especially so since within the current Ghanaian context, the mobile phone as it is in its current state fits into both the domestic and public environment. In its domestic environment, families and communities share handsets, especially during emergencies when a family member loses his or her handset.

There were numerous instances when parents allow their children to share their handsets or friends within the same space. This act of sharing extends beyond the domestic space into the public space where strangers can ask others to offer their handsets when people lose their handsets or were low on credit and cannot afford to make calls from commercial vendors. Although people may invest in a handset on their own, the handsets' usage is not restricted to them alone.

We now proceed to examine who represents the significant others that traders consult before making any mobile phone purchase, and repair decisions. This will be followed by examining the extent of influence from all groups in order to understand if there were any significant differences and why?

Table 10: Influence of Significant others by Mobile phone Ownership mode

	Mobile Phone Ownership Mode			
	Gift	Self-Purchase		
	Mean	Mean	F	P
Influence of significant others	**11.44_a**	**10.12_b**	**6.13**	**0.014**

Source: Researcher's Survey, 2013

From a One-Way-Anova test, Table 10 shows that traders who got their phones as gifts had a significantly higher average score of influence from "significant others" than those who purchased their handsets on their own with a $p< 0.001$ (0.000) and an F ratio of 6.13. Since it has been noted earlier in this chapter that females were more likely to have obtained their phones as gifts this goes to show that female traders were more influenced by significant others in owning a mobile phone. This is a confirmation that those who received their handsets as gifts have very little control over what handset should be given to them as gifts. We explore this issue by examining the relevant socio-demographic characteristics.

Table 11: Demographic characteristic and Source of influence for Mobile Phone Ownership Decision[8]

		Mobile phone decision source of influence																	
		Partner		Male friend		Female friend		Father		Mother		Sister		Brother		Phone repairer		Self		Total	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Gender	Male	**34_a**	**13**	**54_a**	**21**	**4_a**	**2**	**5_a**	**2**	**2_a**	**0**	**3_a**	**1**	**7_a**	**2**	**58_a**	**22**	**87_a**	**34**	**203**	**100**
	Female	**47_b**	**23**	**21_b**	**10**	**9_a**	**5**	**6_a**	**3**	**3_a**	**2**	**4_a**	**2**	**16_b**	**8**	**38_a**	**19**	**58_a**	**29**	**160**	**100**
	Total	**81**	**18**	**75**	**16**	**13**	**3**	**11**	**2**	**5**	**1**	**7**	**2**	**23**	**5**	**96**	**21**	**145**	**32**	**363**	**100**
Age	35 and above	**53_a**	**21**	**39_a**	**16**	**10_a**	**4**	**2_a**	**0**	**0^1**	**0**	**0^1**	**0**	**8_a**	**3**	**62_a**	**25**	**75_a**	**30**	**197**	**100**
	Below 35	**25_b**	**12**	**35_a**	**17**	**3_a**	**2**	**9_b**	**5**	**5_a**	**3**	**7_a**	**4**	**15_b**	**8**	**32_b**	**16**	**70_a**	**35**	**160**	**100**
	Total	**78**	**17**	**74**	**16**	**13**	**3**	**11**	**2**	**5**	**1**	**7**	**2**	**23**	**5**	**94**	**21**	**145**	**32**	**357**	**100**
Education	Below SHS/SSS	**50_a**	**20**	**49_a**	**19**	**10_a**	**4**	**2_a**	**0**	**0^1**	**0**	**2_a**	**0**	**11_a**	**4**	**56_a**	**22**	**74_a**	**29**	**196**	**100**
	SHS/SSS and above	**31_a**	**15**	**26_b**	**13**	**3_a**	**2**	**9_b**	**5**	**5_a**	**3**	**5_a**	**3**	**12_a**	**6**	**40_a**	**20**	**71_a**	**35**	**167**	**100**
	Total	**81**	**17**	**75**	**16**	**13**	**3**	**11**	**2**	**5**	**1**	**7**	**2**	**23**	**5**	**96**	**21**	**145**	**32**	**363**	**100**
Level of Influence	Mean	**10.98_a**		**10.88_a**		**9.31_a**		**8.60_a**		**8.00_a**		**8.86_a**		**9.74_a**		**10.63_a**		**10.37_a**		**10.54**	

Source: Researcher's Survey, 2013

[8] Note: Values in the same column and subtable not sharing the same subscript are significantly different at $p < 0.05$ in the two-sided test of equality for column means. Tests assume equal variances.[1]

1. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

As shown in Table 11, the respondents identified several individuals whom they consulted before making a mobile phone purchasing decision. Before including this question and the accompanying responses to the questionnaire, earlier in-depth interviews revealed the possible sources of influence. From table 11, these sources include several individuals, from family members, partners, friends, and handset repairers. A look at the table shows that a third (32%) of the respondents relied on their previous knowledge of handsets to make such decisions, followed by that of repairers (29%), partners (17%), and male friends (16%) constituting the four with the greatest proportion of representation. The sources with the least representation include brothers (5%), female friends (3%), father (2%), sister (2%) and finally, mothers (1%). Cumulatively, a convincing majority (68%) relies on the views of others in making a decision to own a mobile phone handset. It is evident from the table that apart from partners who were family members, other family members were the least consulted when making a mobile phone decision. Among such a group were parents. This shows that parents were among the least consulted when the respondents want to make a decision to own a handset. Even among friends, the views of male friends were regarded more highly than that of female friends. Beginning with age, let us proceed to look at the socio-demographic differences across the sources of influence.

A closer look at Table 11 shows that while those older than 34 years consult their partners (21%) more often than their male friends (16%). The reverse is true for those younger years (12% for partners and 17% for male friends). It is therefore not surprising that based on a z-proportional test a greater proportion of those 35 years and older chose their partners as the source of influence than those younger. Phone repairers constitute another important source of influence for the traders. However, a greater proportion of those older than 34 years (25%) rely on such a source than those younger (16%). In contrast, although the influence of fathers is lower for all

groups it is ranked higher (5%) than that of female friends (2%) for those younger. This confirms why a greater proportion of those younger than 35 years chose their fathers as the source of influence than those older. In addition, a greater proportion of those aged 34 years and below (8%) identified their brothers as a source of influence than those older (3%). This goes to suggest that although all traders identify phone repairers, partners, and male friends as the top sources of influence, a greater proportion of those older than 34 years chose these sources than those younger than 35 years. This, however, changes at the lower end of sources of influence as a greater proportion of those younger than 35 years identified close relatives as the sources of influence than those older than 34 years.

Table 11 further provides us with the possible gender differences in the sources of influence. The Table shows that in the four top sources of influence, there were clear gender differences in two of the sources, specifically, partners and male friends. From the table, a greater proportion of female respondents (23%) selected their partners as the source of influence than male (13%) respondents. However, the reverse is true for males (21%) than females (10%) when the views of male friends were sought before making a mobile phone handset purchase decision. At the least end of sources of influence, a greater proportion of female respondents (8%) relied on the views of their brothers than male respondents (3%) did. This goes to confirm that while partners were more influential for female respondents; male friends were more influential for male respondents. There were no significant proportional gender differences across all other sources of influence.

A further look at Table 11 will aid one to understand the possible educational differences based on the sources of influence. From the top four sources of influence, there were proportional

educational differences in the choice of male friends as a source of influence. As the Table shows, a greater proportion of those who chose male friends as a source of information have educational levels lower than SHS/SSS based on a z-test (significant at $p<0.05$). Alternatively, at the least influential end of sources of influence, fathers as sources of influence show a discerning educational difference with a greater proportion of those who selected them having SHS and above educational levels. Apart from these two, no significant educational differences were observed across all other sources of influence. Table 11 shows that amongst the sources of influence, women represent the least group to be consulted, with mothers having the least representation (sometimes no representation at all). This shows that gender plays a major role when it has to do with consulting anyone for advice thereby revealing that men were perceived to be a better source of valuable information than women on mobile phone ownership and management. This therefore confirms that at the imagination and appropriation stage marketers and designers of the handsets have very little influence on the respondents deciding to own a particular handset. The influence is largely from partners, friends, and handset repairers. This is particularly important for those who got their handsets as gifts, the majority of whom were females.

Although these were various sources of influence, the extent of influence each source exerts is about the same. Table 11 shows us the average scores of influence across all the sources. From the table the average influence for all the sources is 10.54. Although there were some numerical differences, a t-test and a Bonferroni correction across all the sources shows that there is no significant difference across all the sources confirming that each source exerts roughly the same level of influence.

In conclusion, from the views of the contributors to the domestication theory, the imagination and appropriation stages of the domestication process places emphasis on how people get to purchase technology as a result of influences from marketers, designers and friends (Silverstone et al. (1994), Ling (2004)).

This research shows that purchase is not the only way that these traders get to become owners and users of mobile phones, they also ride on the culture of gift giving. However, evidence from Sey (2011) and Asante (2011) confirm gift giving as the dominant means for owning mobile phones. This, however, is changing, as confirmed by this study with particular reference to male traders who self-finance their mobile phones. This proves that this part of the domestication process needs to be expanded to include other modes of owning technology, such as gift giving which is a major feature in the Ghanaian context particularly for women. The culture of gifting handsets is further enhanced by the habit of changing handsets for purposes other than discarding previously dysfunctional handsets. These functional, but less appealing handsets were often given out as gifts to partners, children and parents or retained for use during emergencies when the preferred handset is stolen or missing.

Although the traders looked down on purchasing slightly used handsets, they saw nothing wrong with receiving the handsets as gifts from relatives who had once used them, thereby giving the handset a second lease of life. The handsets then become cross-generational artefacts, traveling from one generation of user to another within a short space of time. During the appropriation stage, however, there were socio-demographic differences on how the mobile phone is owned. With reference to gender, while male traders were more likely to purchase their handsets, female traders mostly receive them as gifts. Those older than 34 years were more likely to purchase their

handsets than obtain them as gifts. Additionally, choosing a handset is largely based on the perceived quality of the handset as well as the added features of a radio, camera and size/weight. However, the camera and size/weight features were more significant for men and those younger than 35 than for women and those older than 34years in choosing a handset. Additionally, male traders were more likely to have been the source for their respective households experiencing the mobile phone for the first time.

This chapter further shows that the average length of time for being a mobile phone user is 9 years for the traders and, although both sexes have used the mobile phone for the same number of years (9 years on the average), male traders have changed more handsets over the years than the females have.

The traders above the age of 24 years have used the mobile phone for significantly longer years than those below the 24 years. However, only those below 25 years change handsets more frequently per year than any other age group, on the average one handset per year (an average of 6 handsets over 6 years). The two top reasons for changing handsets over the years include, replacing faulty handsets and stolen handsets both accounting for 70% of the reasons provided for changing handsets over the years. It is therefore not surprising that the top feature they considered in owning their current handset is the perceived quality of the handset. In this regard, the mobile phone has an elastic process of adoption, which does not end with the first handset owned. For the traders, depending on the quality of the handset and theft one cannot prevent the annual changes of handsets. This is an indication that in the context of the traders, the mobile phone appropriation moment is fluid and continuous. Additionally, at the imagination and appropriation stage, marketers and designers of the handsets have no influence on the

respondents deciding to own a particular handset. The influence is largely from partners, friends, and handset repairers. This is particularly important for those who got their handsets as gifts.

CHAPTER SIX

OBJECTIFICATION IN INCORPORATION: WE DISPLAY AND USE IT DIFFERENTLY FROM BEFORE: INCORPORATION OF THE MOBILE PHONE

6.1 Introduction

Turkle (2008), in her article, "Always-On/Always-On-You" showed that one of the outstanding developments of technology in the 21st century is the development of communication technologies, especially, the little gadget called the mobile phone. The mobile phone on you is increasingly gaining a personalized identity. In most cases, this represents the identity of us. As a gadget, it is seen to be enhancing who we were by extending and helping define our identity by what the mobile phone handset represents to us as individuals and a people. We were now all typical examples of "cyborgs" with our handsets completing us as people and making us connected in ways that we easily take for granted. If the handset is an extension of us then we can argue that understanding our relationship with our handset also can translate into understanding who we were, and what we represent as individuals. Consequently, how we display our handsets, whether knowingly or unknowingly can portray who we were. Display therefore is a critical part of showing our relationship with the handsets and transmitting our values simultaneously to others in our social groups. Display is also confirmed in usage. It is therefore important to consider how central usage is to display. This chapter focuses on two key parts of the domestication process: objectification and incorporation. While objectification deals with the display of artefacts and how such a display helps in the definition of the self, incorporation represents usage and how usage conforms to individual routines, representing the domain of "taming the wild".

6.2 Objectification

As Silverstone et al. (1994) explain, this stage of the domestication process deals with the display of the artefact in the domestic context and the resultant values portrayed to others within the society. What happens to this stage if the space is a non-traditional domestic space and the artefact is not built solely for the domestic space? How is display reflected in mobile phone use? Evidence from Portus' (2008) work on the Filipino poor shows that for display reasons people often prefer the latest handset to just having a handset purposely for making and receiving calls. For some it is not just enough to have a handset that can make and receive calls. Having the latest handset bestows more respect on the individual, thereby giving the individual hope that he or she is part of a higher social status. Portus (2008) could not tell how widespread this phenomenon is. Handset display is also a form of social security for women. With a handset close-by, prospective criminals know that would be victims have access to security on their fingertips. This is important in poor communities where crime is rampant. Women aware of this find the public display of the handset as an extension of their security needs.

The ringtone also sometimes signifies the status of the holder of the handset. In the Filipino context, Portus (2008) reports that specific ringtones were assigned lower status. Consequently, people who feel the public display will lead to a lowering of social status amongst peers will be forced to mute the ringtone to avoid the public display of the handset. Sometimes calls were avoided so as to avoid the ridicule of peers. This is very popular, but not restricted to the youth or younger users of the handset. This shows that ringtones provide insight into the status of the respondents.

In order to establish the display status of the respondents of the study, a number of issues were examined. Key amongst them were the role of the ringtone, the physical display of the handset and the reflection of these on the behaviour of the respondents. Various ringtones were identified amongst the traders. During the in-depth interviews, it was established that the respondents were using two broad forms of ringtones, the polyphonic and hi-fi ringtones. The polyphonic ringtones were often preinstalled by the designer of the handset, however, the hi-fi tones were often downloaded and installed by the owner of the handset with the assistance of children, friends and commercial vendors. The commercial vendor is often located within the boundaries of the market. However, younger and less technically gifted mobile phone owners often seek their services.

Table 12: Demographic characteristics and Ringtones[9]

	Age						Gender						Education					
	35 and above		Below 35		Total		Male		Female		Total		Below SHS/SSS		SHS/SSS and above		Total	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Hip life/ High life tones	**3_a**	**2**	**4_b**	**3**	**3**	**3**	**4_a**	**3**	**2_b**	**2**	**3**	**3**	**3_a**	**3**	**3_b**	**3**	**3**	**3**
Polyphonic tones	**4_a**	**3**	**3_b**	**3**	**3**	**3**	**3_a**	**3**	**4_a**	**3**	**3**	**3**	**4_a**	**3**	**3_a**	**3**	**3**	**3**
Sporty tones	**2_a**	**2**	**2_a**	**2**	**2**	**2**	**2_a**	**2**	**1_b**	**1**	**2**	**2**	**1_a**	**1**	**2_a**	**2**	**2**	**2**
Religious tones	**4_a**	**3**	**4_b**	**3**	**4**	**3**	**4_a**	**3**	**4_a**	**3**	**4**	**3**	**4_a**	**3**	**4_b**	**3**	**4**	**3**
Politically related tones	**2_a**	**2**	**1_a**	**1**	**1**	**1**	**2_a**	**2**	**1_a**	**1**	**2**	**1**	**1_a**	**1**	**2_a**	**2**	**2**	**1**
Total Ringtone Use	**13.87_a**	**5.83**	**13.27_a**	**4.80**	**13.61**	**5.40**	**14.21_a**	**6.14**	**13.06_b**	**4.37**	**13.70**	**5.45**	**13.71_a**	**5.37**	**13.68_a**	**5.55**	**13.70**	**5.45**

Source: Researcher's Survey, 2013

[9] Note: Values in the same row and subtable not sharing the same subscript are significantly different at $p < 0.05$ in the two-sided test of equality for column means. Tests assume equal variances.[1]

1. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

Table 12 summarizes the various forms of ringtones as well as the ringtone use differences across Gender, Age and Level of education observed from the field. It shows that among the hi-fi tones were tones such as, hip-life and high-life, sporty tones, religious tones, and political satires. In order to establish the level of usage, a 7-point Likert subscale for using ringtones based on the observed set of ringtones were presented to the respondents. The table shows the scores and their demographic differences beginning with gender. From the total average score for using ringtones, it shows that male respondents tend to use ringtones more frequently than female respondents do with a mean score of 14.21 and 13.06 respectively. A closer look at the table further reveals that apart from high-life/hip-life and sporty tones, both genders on the average use ringtones with the same frequency. For both sporty and high-life tones, on the average male traders tend to use them more frequently (M=2, M=4 respectively) than the female traders do (M=1, M=2 respectively). Additionally, while male respondents on the average use more of high-life/hip-life (M=4) and religious (M=4) tones female respondents tend to use more of polyphonic (M=4) and religious tones (M=4). The least used ringtones on the average were sporty (M=1) and political satire (M=1) for both gender groups. This shows that religious tones were highly valued amongst the traders, irrespective of one's gender. A further interrogation of this showed that these religious ringtones were often in the form of praise and worship songs or prayers from their religious leaders declaring God's protection for their business, family, health and properties. A similar message is also carried by the praise and worship tones. Consequently, every call they get they want the ringtone to profess these messages to all and sundry. Additionally, male traders prefer using more than just the religious tones as their use of high-life or hip-life tones show.

The Table takes these differences further by looking at the age differences in the ringtones. While those older than 34 years on the average use religious (M=4) and polyphonic tones (M=4) more frequently than any other ringtone, those younger on the average use religious (M=4) and high-life and hip life tones (M=4) more frequently. An independent t-test further reveals that polyphonic and religious tones were used more regularly by those older than 34 years than those younger than 35years. However, those younger on the average use hip-life and high-life tones most regularly. This shows that hip-life/high-life ringtones were very much valued by younger traders. It represents an expression that confirms the trader's control over the features of the handset, thereby granting them some increased respect amongst their peers. Both age groups equally used all other ringtones (sporty and politically related tones) less frequently. We glean from this that religious tones were highly valued across all ages, however, high-life and hip-life, and polyphonic ringtones were a function of age.

With reference to education, Table 12 shows that although there is no significant difference in the total average frequency in the ringtone use, a closer look at the Table shows the opposite. The Table shows that religious (M=4) and polyphonic tones (M=4) on the average were the most frequently used ringtones for those with educational levels lower than SHS. However, for those with educational levels from SHS and above only religious tones (M=4) and high life tones (M=3), followed by polyphonic tones (M=3) were used most frequently. Nevertheless, religious tones were on the average used more. This shows that although both educational levels use religious tones, polyphonic tones and high-life tones, those with lower educational levels use religious tones and high-life/hip-life tones more frequently than those with higher education do. All these go to show that there were significant age, gender and educational differences in the frequency and type of ringtones used by the traders. Further, the ringtones used can also be said

to be a reflection of who the users were. For instance, the demographic data shows that all respondents belong to one religious group or the other, mostly of the Christian faith; it is therefore not surprising that religious ringtones featured as the most frequently used ringtone across all socio-demographic characteristics. This shows that religious tones were highly valued amongst the traders, irrespective of one's gender, age, and level of education.

The varied messages transmitted through these ringtones confirm that ringtones were increasingly becoming an extension of the self. A look at the ringtones of the traders and one can tell the background of the person. While religion may not be a function of gender, age and education, high-life/Hip-life, polyphonic and to some extent sporty tones were functions of gender, age and education. It is worthy to note that these ringtones were not the ones encoded into the handset by the designer, but were often downloaded and installed into the handset by the owner with the help of a third party. This goes to show that people have moved away from relying on the predefined ringtones from the designer to choosing something they can identify with, and others can also identify them with. Once again an examination of the biography of the mobile phone using the ringtone has shown us how the mobile phone is an extension of the trader's self, an embodiment of who they were.

6.2.1 Objectification in Appropriation

Mobile phone objectification is not exclusive to the display of handset ringtones by the traders. A closer look at tables in chapter four reveals that people engage in some form of objectification, even when they were at the appropriation stage. Tables 5 and 7 which deal with the reasons for respondents changing their handsets over the years, the trendy and aesthetic features of the handset played a part in these changes. However, a greater proportion of men were affected by

this than women were. Trendiness and aesthetic features of a handset were critical parts of display as these were also the basis for bestowing status on individual owners. This was more meaningful for male respondents and younger respondents. Additionally, Tables 5 and 7 reveal that even in the ownership of their current handsets, trendiness and aesthetics still played a role with a greater proportion of males and respondents with high education than females and those with low education choosing their handsets for trendy reasons. This is a confirmation that trendiness and aesthetics play a role during the appropriation stage.

Beyond these features were the pull features of a handset, that is, the features that respondents consider before owning it. Trendiness also implies aesthetics as well as some specific features of the mobile phone handset. This constitutes the pull features of the handset. From an earlier Table (9) from Chapter Four, size/ weight, colour, camera and radio were all features considered before the ownership of a particular handset. These were all features that constitute part of the trendy and aesthetic nature of the mobile phone handset. Features such as WiFi, radio, and torchlight were all equally important in establishing the trendy nature of the handset. However, the camera feature is the only characteristic with clear significant differences across age, gender, and level of education. In order to confirm the extent of these influences, a direct logistic regression test was undertaken to ascertain the likelihood that respondents will report that they selected a handset for display purposes by operationalizing display purposes based on the respondents' decision to use the camera as the basis for selecting a handset.

Table 13: Logistic Regression Predicting Likelihood of Selecting a handset for display purposes

							95% C.I. for Odds Ratio	
	B	S.E.	Wald	Df	*P*	Odds Ratio	Lower	Upper
Gender	-0.540	0.229	5.572	1	0.018	0.583	0.372	0.912
Age	-0.042	0.012	12.460	1	0.000	0.959	0.937	0.982
Education	0.227	0.230	0.975	1	0.323	1.255	0.799	1.972
Constant	1.273	0.466	7.475	1	0.006	3.571		

Source: Researcher's Survey, 2013

The model contained three independent variables (Sex, Age and Level of education). The full model containing all predictors was statistically significant, X^2 (3, N=363) = 27.083, p< 0.001, indicating that the model was able to distinguish between respondents who reported selecting a handset for display reasons and those who did not. The entire model as a whole explained between 7.3% (Cox and Snell R square) and 9.8% (Nagelkerke R squared), of the variance in display status, and correctly classified 59.7% of cases. As shown in Table 13, two of the variables made statistically significant contributions to the model (Age and Gender). The strongest predictor of owning a handset for display reasons was age, recording an odds ratio of 0.959. The odds ratio of 0.9595 is less than 1 (one). This indicated that for every increase in age, respondents were 0.96 less likely to select a handset for display purposes than those who did not select it, controlling for all other factors in the model. Additionally, the odds ratio of 0.503 was recorded for gender, also less than 1 (one), indicating for gender, male respondents were 0.503 more likely to own handsets on the bases of display than those who did not select it, controlling for all other factors in the model (see Table 13).

The above discussions show that although objectification is a major stage in the domestication process it does not emerge as a distinct stage on its own, but begins by taking its source from appropriation, when a decision is either made to change handsets or choose a particular handset of interest. Additionally, not all respondents were concerned with owning a handset for display purposes as this reason is inversely related to age and gender, the two statistically significant factors in ownership of a handset based on display reasons for achieving a social status. In charting the historical usage of the handset, the data further confirm that respondents have also moved away from relying on the call feature of a handset in making a decision to own one to looking out for trendy functions.

Figure 6: Display of a Dysfunctional Mobile phone

Source: A picture of a dysfunctional yet functional handset, Researcher's field Notes, 2013

Table 14: Socio-demographic characteristics and Trendy reasons for owning a handset[10]

	Gender						Age						Education					
	Male		Female		Total		35 and above		Below 35		Total		< SHS/SSS		SHS/SSS and above		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
None Trendy Reason	56_a	28	68_b	43	124	34	78_a	40	44_b	28	122	34	75_a	38	49_a	30	124	34
Trendy reasons	147_a	72	92_b	58	239	66	119_a	60	116_b	73	235	66	121_a	62	118_a	71	239	66
Total	203	100	160	100	363	100	197	100.0	160	100	357	100	196	100	167	100	363	100
$X^2(p)$				8.849 (0.003)						5.741 (0.017)						3.193 (0.074)		
Cramer's V					0.16						0.13							

Source: Researcher's Survey, 2013

[10] 1. Tests are adjusted for all pairwise comparisons within a row of each innermost sub table using the Bonferroni correction.

Note: Values in the same row and sub table not sharing the same subscript are significantly different at $p < 0.05$ in the two-sided test of equality for column proportions. Tests assume equal variances.[1]

Table 14 explores the relationship between the demographic characteristics and trend based decision to own a handset. The Table shows that trendiness of the handset matters more to a greater proportion of males (72%) than females (56%). A chi-square value of 8.849 is significant at $p<0.005$ (0.003) and shows that there is a relationship between gender and the decision to choose a handset based on its trendy features. However, a Cramer's V of 0.16 confirms that the relationship is weak. The table further shows that a greater proportion of those aged below 35 years were more concerned with the trendiness of the handset than those older. A chi-square value of 5.741 with $p<0.05$ (0.017) further confirms that a relationship exists between age and choosing a handset based on its trendiness. However, a Cramer's V of 0.13 confirms that the relationship is a weak one. There is, however, no significant educational difference in trendiness as a reason for choosing a handset. This is an indication that age and gender play a role in choosing a handset for trendy reasons but not education. Choosing a handset for trendy reasons has very little to do with one's educational level.

Objectification is not only restricted to ringtones but also the handset make. As explained in chapter four the features of a handset play a significant role in the ownership of a particular handset. However, due to the high incidence of handset theft, the traders, especially, the female traders, those older than 34 years and those with low levels of education (below SHS) refrain from replacing their handsets until it is dysfunctional for calls (refer to Figure 6). For many of the traders in these categories, a handset is only categorised as dysfunctional when it totally loses its ability to make and receive calls. The reason for this is that thieves do not want such handsets as a result the traders feel much safer taking calls in public. Others also used low-end handsets because they hardly get stolen. For those who use high-end handsets like the smart phones - which was the majority (56%) of handsets showed to the researcher- they often keep them from

eyes view to ensure their safety. This shows that the trading context of the traders makes it difficult for them to be able to obtain any form of social status by physically displaying their handset. This is a clear instance of context and the biography of the handset shaping the objectification of the handset.

Another issue of importance for objectification is fashion. Not only do traders display their handset in the form of their ringtones and the preferred features, but their phones also inform their fashion decisions. For instance, some male traders confirmed, picking smaller handsets because they wanted to be able to keep them in their pockets consequently, they preferred buying clothes designed with deep pockets. Female respondents on the other hand, prefer choosing handbags that have side pockets. This shows that one way or the other fashion decisions were not separate from mobile phone handset purchasing decisions.

Just as the television is displayed within the physical boundaries of the home with predefined or soon to be defined aesthetic needs of the home, so does a mobile phone handset affect the development of the general aesthetics of the self. Additionally, because mobile phone handset theft is a major challenge for the traders, and the second most popular reason for changing handsets over the years, the mobile phone is hardly left in the open, unless the individual has a reason for doing so. Consequently, the age-old attitude of hanging the handset on the neck as a "jewel" was not observed amongst the traders (Overa, 2008; Ling, 2004).

An exploration of the socio-demographic differences in handsets fashion influencing factor, with reference to table 15, reveals that with a $p<0.05$ females more than males were greatly influenced in their fashion decisions by their handset design. Additionally, those older than 34years were more likely to be influenced in their fashion decisions by their handset design than those younger

than 35 years were. This is, however, irrelevant for the traders' educational background. Consequently, implied in what Silverstone et al. (1994) call the appropriation stage is what they also called objectification (display for social status). However, some other aspect of objectification is also expressed in usage, the domain of the incorporation stage

Table 15: Mobile phone ownership influence on Fashion decision[11]

	Gender			Age			Education		
	Male	Female	Total	35 and above	Below 35	Total	Below SHS/SSS	SHS/SSS and above	Total
	M	M	M	M	M	M	M	M	M
Fashion Decision	**11.51_a**	**13.55_b**	**12.42**	**13.71_a**	**10.97_b**	**12.49**	**12.72_a**	**12.07_a**	**12.42**

Source: Researcher's Survey, 2013

Silverstone et al. (1994) consider the stage of incorporation as the stage that routinizes and propels specific kinds of usage. Other scholars such as Lim (2006) and Ling (2004) also confirm this. As such, the usage of artefacts is contingent on the routines of the user. To understand the routines of people is to understand their usage of artefacts. It is from this background that we proceed to examine the usage patterns of the respondents of the study. One cannot also understand usage without understanding both the functional and operational control that respondents have over their handsets. As a result, we begin this section by establishing the level of control that traders have over their handsets. We identified two categories of handset control.

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Note: Values in the same row and sub table not sharing the same subscript are significantly different at p< 0.05 in the two-sided test of equality for column means. Tests assume equal variances.[1]

1. Tests are adjusted for all pairwise comparisons within a row of each innermost sub table using the Bonferroni correction.

Table 16: Demographic Differences in Control Over the Mobile Phone Handset[12]

	Gender			Age			Education		
	Male	Female	Total	35 and above	Below 35	Total	Below SHS/SSS	SHS/SSS and above	Total
	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
Control over the mobile phone operation	**22.59_a**	**19.59_b**	**21.26**	**20.31_a**	**22.23_b**	**21.17**	**20.24_a**	**22.44_b**	**21.26**
Control over mobile phone operational function	**23.58_a**	**20.21_b**	**22.09**	**20.42_a**	**23.99_b**	**22.01**	**20.73_a**	**23.67_b**	**22.09**

Source: Researcher's Survey, 2013

The first is Operational Control, this consisted of the ability to charge the mobile phone when the power is down, switch the mobile phone on and off, recharge call cards and dial contacts without any assistance. Using an independent t-test table shows that on the average male traders have significantly (using t-test) higher (22.59) operational control than the female traders (19.59). Additionally, those below 35 years tend to have significantly higher (22.23) operational control than those older than 34 (20.31) years. Finally, those with SHS and above educational level also have significantly higher (22.44)) operational control than those with educational level lower than SSS/SHS (20.24). (See Table 16).

[12] Note: Values in the same row and sub table not sharing the same subscript are significantly different at $p< 0.05$ in the two-sided test of equality for column means. Tests assume equal variances.[1]

1. Tests are adjusted for all pairwise comparisons within a row of each innermost sub table using the Bonferroni correction.

The second category of control was the control over functions which also consisted of locating and using various features of the handsets such as alarm, invoking the contact list, checking on messages, setting the alarm, or using other functions of the mobile phone without any assistance. The Table further shows that male traders tend to have significantly higher (23.58) control over the functions of the mobile phone than female respondents (20.21). Those younger tend to have significantly higher (23.99) control over the operational functions than those older (20.42). Finally, those with SHS/SSS or higher educational levels also showed to have higher (23.67) control over operational functions than those with educational levels lower than SHS/SSS (20.73). This is a verification that there were significant differences across gender, age and education with regards to the operational and functional control that respondents have over their handsets. Additionally, this also shows that the number of features that will be used on the handset will vary depending on one's gender, age and educational level. (See Table 16).

In conclusion, younger male traders with SSS/SHS educational levels have the greatest operational and functional control over their handsets than any other group. We now proceed to look at the various features of the mobile phone handset that were used by the traders as well as the various uses to which these features were put.

Various studies predating 2013 (Donner and Escobari, 2010; Asante, 2011; Overa, 2008) showed that amongst traders the two most frequently used features of the handset were the call and SMS features with the call feature being the most dominant function. Currently, mobile phone handsets have been equipped with varied features. So key were these features that they have become defining features for selecting a handset as confirmed by earlier tables in this study. In

this study, 56% of the 363 respondents were using smartphones largely from Samsung and Nokia.

Table 17: List of Mobile Phone Features and their frequency of usage[13]

Items	Minimum use per day	N	%	Rank
Voice calls	At least 5 times a day	**326**	16%	1
Contact customers	At least 5 times a day	**204**	10%	2
Keeping time	At least 5 times a day	**170**	8%	3
SMS	At least 5 times a day	**108**	5%	4
Calculating	At least 5 times a day	**109**	5%	4
Radio	At least 5 times a day	**95**	5%	4
Check on prices	At least 5 times a day	**110**	5%	4
Entertainment	At least 5 times a day	**93**	4%	5
Get in touch with extended family relation	At least 5 times a day	**78**	4%	5
Check on partner for household coordination	At least 5 times a day	**79**	4%	5
Play music	At least 5 times a day	**71**	3%	6
Facebook	At least 5 times a day	**54**	3%	6
Whatsapp	At least 5 times a day	**62**	3%	6
Check on location of goods with best prices	At least 5 times a day	**61**	3%	6
Check on children at school and at home	At least 5 times a day	**63**	3%	6
Send and receive emails	At least 5 times a day	**38**	2%	7
Visit websites and browse or search the internet	At least 5 times a day	**34**	2%	7
Visiting social network apps	At least 5 times a day	**47**	2%	7
Alarm	At least 5 times a day	**51**	2%	7
Game	At least 5 times a day	**34**	2%	7
Watch pictures	At least 5 times a day	**40**	2%	7
Take pictures	At least 5 times a day	**33**	2%	7
Mobile money transfer	At least 5 times a day	**16**	1%	8
Ringtones	At least 5 times a day	**24**	1%	8
Video recording	At least 5 times a day	**16**	1%	8
Twitter	At least 5 times a day	**21**	1%	8
Youtube	At least 5 times a day	**14**	1%	8
Skype	At least 5 times a day	**14**	1%	8
Google+	At least 5 times a day	**19**	1%	8
Total		**2084**	**100%**	

Source: Researcher's Survey, 2013

In order to establish the various changes in the current handsets as used by the traders as well as the type of uses to which these phones were put, the in-depth interviews and observation

[13] Multiple response allowed

revealed 28 ways in which traders use their handsets. Using the interview schedule, all participants in the study were asked to identify the frequency with which they used these featured items. Table 17 shows that of the 28 items, voice calls appear to be the most widely used feature with 16% of all activities on the handset related to receiving calls. The second most frequently used feature is the contacting of customers, scoring 10% of all total activities the mobile phone was used for. This proves that the traders use their handsets more frequently to contact their customers than any other social group.

Closely following this as the next most frequent activity engaged in with the handset is the time keeping function also receiving 8% of all total activities. SMS, calculator function, radio feature, and checking of prices of goods all tied at the fourth place. Representing the fourth most frequently used features of the mobile phone with each scoring 5% of all activities. The next most frequent set of activities employed using the mobile phone were; to get in touch with partners for household coordination and get in touch with extended relatives both scoring 4% each of total activities. The sixth most frequently employed features was the use of the mobile phone for checking on children at school and home, checking for location of goods with best prices, the use of Facebook and Whatsapp, and finally, the use of the mobile phone to play music.

All items ranked as the sixth most frequent had an equal percentage of 3%. At the bottom of the list of items were the seventh and eight most frequently used items, also constituting the least used. This included sending and receiving of emails, use of the internet for accessing web pages, visiting social network sites, using the alarm, playing games, looking at pictures as well as taking pictures, with all equally securing 2% of all activities. Finally, the least used features were,

mobile money transfer, listening to ringtones, video-recording, using twitter, YouTube, Skype, and Google plus each representing 1% of all activities. The respondents used all these items at least five times a day. The interesting thing about these items is the fact that traders used their handset more frequently for contacting their customers than relatives. Even the use of handsets for checking on prices was employed more frequently in a day than getting in touch with family members.

A key explanation the traders gave for this was that they always see their relations before they leave home or when they return home from work, however, things related to their trading activities, especially contacting customers, checking on prices were done with people that they normally do not occupy the same domestic space with (38 years old Female retailer). Despite the apparent dominant nature of trade related issues in their use of the handset, the mobile money transfer function was not popular amongst the traders as it is among the least engaged feature. In the views of a retailer, although he uses mobile money, it is often for sending money to his children when they were in school, but not for business purposes (41 years, male retailer with stall). Other respondents also confirmed using that feature to support other family members in financial need. To them, mobile money is not a function of business, but rather of family relations.

Two other features directly related to their trading activities were the functions of time and the calculator. Per their own activities, these were part of the fourth most frequently used features in a day. However, in contrast with the features that they preferred in purchasing a handset, these same features were the least preferred features. This is largely because due to the changes in handsets and the long presence of the mobile phone within the Ghanaian society, additional

features were more important to traders than those that were available on all other forms of mobile phones. Although they were most frequently used, they were also taken for granted features when selecting a handset. For instance, traders select handsets without confirming whether the call, time or calculator functions were operational. These features, although may not be preferred in selecting a handset, they were latently implied, as confirmed by the dominance of voice calls, and calculator with the only exception being the radio feature.

Another observation from the table is the noticeable presence of social network apps, something that did not exist for them prior to 2012 (Overa, 2008; Asante, 2011). According to the table, although five major social network apps were popular amongst the traders, Whatsapp and Facebook were the most frequently used apps. When respondents who use them were further engaged, they tend to create the impression that they were better users of the mobile phone that those who do not use them. In other instances, those who have heard about these features but do not know how to use them want to be associated with them by creating the impression that they use them. This usage typifies objectification (display) as it is latently seen as a valuable means for improving one's social standing amongst colleague traders. The popularity of these two apps even surpasses some of the regular features of handsets such as using the camera for pictures and videos, or gaming, or just listening to the ringtones on the handsets. Consequently, they were equally part of the sixth most frequently used items.

Based on the above discussions the features were grouped into operational features of handsets, entertainment uses, social and business uses, and social network uses. We now proceed to explore if there were any demographic differences in these features by considering the total scores for the subscales for the different but connected features and usage patterns. From Table

18, using repeated independent t-tests based on the Bonferroni correction, male respondents on the average tend to use more features of the mobile phone more regularly than female respondents do. This goes to show that males were heavier users of the mobile phone handset than their female counterparts with the males scoring an average of 30.87 as against 27.88 for the female traders. This category of scores takes into consideration all factory and non-factory assigned features as identified by the respondents. This included the voice, SMS, internet, clock, entertainment, alarm, calculator, e-mails, mobile money transfer, and finally visiting social network websites. Additionally, using a t-test, it was confirmed that on the average those younger than 35 years (M=32.25) use significantly more features of the mobile phone handset than those older than 34 years (M=27.17). The table further shows that those with higher education (SSS or more) (M=31.62) significantly tend to use more features of the mobile phone than those with lower education (M=27.77). This reveals that across gender, age and educational levels, there were significant differences in the frequency and the number of features of the mobile phone that the traders use. This goes to say that males older than 34 years with higher education were the most likely to use more features of the mobile phone more frequently than other demographic users.

A Two-Way between-groups analysis of variance was conducted, as measured by the use of mobile phone features' test. Respondents were divided into five groups according to their age (Group 1:15-24 years; Group 2: 25-34; Group 3: 35-44; Group 4: 45-54; Group 5: 55 and above). The interaction between age and gender group was statistically significant, F (4, 345) = 3.431, p = 0.009. There was a statistically significant main effect for age, F (4, 345) =3.174, p=0.014. However, the effect size was small (partial eta squared = 0.033). Post-hoc comparisons using the Tukey HSD test indicated that the mean score for the 15 – 24 years group (M=32.4737,

10.40107) was significantly different from the 35-44 age group (*M*=27.5403, SD=10.54252) and the >54 age group (M=22.4615, SD=11.56586). Additionally, the mean score for the 25-34 age group (M=32.1188, SD=10.15607) was significantly different from all other age groups with the exception of the 15 to 24 years group. The 45 to 54 years group (M=27.4333, SD=11.54999) was significantly different from only those aged 25 to 34 years. There was a statistically significant main effect for gender, F (1, 345) =11.924, p=0.001 (see Appendix A).

Table 18: Demographic Differences in Mobile Phone Usage[14]

	Gender				Age				Education			
	Male		Female		>=35		<35		<SHS/SSS		>=SHS/SSS	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Total Mobile Functions Used	**30.87$_a$**	**10.29**	**27.88$_b$**	**11.48**	**27.17$_a$**	**10.94**	**32.25$_b$**	**10.21**	**27.77$_a$**	**10.58**	**31.62$_b$**	**10.98**
Total Entertainment usage purposes	**24.82$_a$**	**12.29**	**19.26$_b$**	**12.39**	**18.61$_a$**	**11.98**	**26.72$_b$**	**11.97**	**20.96$_a$**	**12.87**	**23.98$_b$**	**12.17**
Total Social and Business use	**27.25$_a$**	**8.96**	**28.42$_a$**	**8.69**	**29.44$_a$**	**8.39**	**25.73$_b$**	**9.00**	**28.65$_a$**	**8.39**	**26.73$_b$**	**9.27**
Total Business use	**14.43$_a$**	**5.12**	**15.09$_a$**	**4.71**	**15.07$_a$**	**4.69**	**14.37$_a$**	**5.25**	**14.86$_a$**	**4.82**	**14.56$_a$**	**5.10**
Total social use	**12.82$_a$**	**5.72**	**13.33$_a$**	**5.79**	**14.37$_a$**	**5.46**	**11.36$_b$**	**5.67**	**13.80$_a$**	**5.32**	**12.17$_b$**	**6.11**
Total social media use	**25.95$_a$**	**8.65**	**27.53$_a$**	**9.42**	**23.43$_a$**	**7.35**	**31.33$_b$**	**8.52**	**26.00$_a$**	**11.27**	**27.25$_a$**	**6.57**

Source: Researcher's Survey, 2013

[14] Note: Values in the same row and sub table not sharing the same subscript are significantly different at $p< 0.05$ in the two-sided test of equality for column means. Tests assume equal variances.

1. Tests are adjusted for all pairwise comparisons within a row of each innermost sub table using the Bonferroni correction.

In categorising the usage patterns, the researcher identified four distinct patterns to be consistent with all the traders. The averages for each total usage score was examined across gender, age and education. First to be considered was the total score for using the mobile phone for entertainment purposes. Based on independent t-test using the Bonferroni correction, it was established that on the average, male (M=24.82) traders significantly used the entertainment features of the mobile phone more frequently than female traders (M=19.26) did. Those younger than 34 years (M=26.72) also engaged in these activities more often than their older counterparts did (M=18.61).

Finally, those with higher educational levels (SHS and above) (M=23.89) also use these same features more frequently than those with lower educational levels did (M=20.96). Both male (M=27.25) and female traders (M=28.42) use their handsets for social and business purposes put together with the same degree of frequency, consequently, there is very little gender difference here. The same applies to the ages of the respondents. This shows that irrespective of one's age or gender, the business and social uses of the mobile phone were of equal importance and urgency.

However, clear significant educational differences existed in terms of the total combination of social and business uses. With regard to this, those with lower education (below SSS) (M=28.65) use the handset more frequently for social and business uses than those with higher education (SSS and above) (M=26.73). However, social uses showed the same significant educational difference, when social uses were disaggregated. This implies that irrespective of traders' gender, age and education they were likely to use the mobile phone for business purposes with the same frequency. However, social uses were more a function of education as

those with lower education use the mobile phone for such a purpose more often than those with higher education (SSS/SHS and above) (See Table 18).

6.3 Routinizing the uses and features of the handset

Discussion on the usage patterns shows clear socio-demographic differences, especially in areas that the routines of the respondents were significantly different. A major routine that all participants were equally involved in is their involvement in their trading activities. This form of business, irrespective of an individual's form of trade, consists of customers who buy from them and those that the traders get their stock from, as well as issues of pricing and stocking. A look at the usage patterns as represented in table 18 shows clearly that irrespective of the trader's gender, age and level of education, they were all equally involved in their trading activities. The business routine of the traders consists of getting in touch with customers, checking on prices, negotiating for goods for stocking and restocking. This goes on throughout the entire trading week.

Despite the fact that there might be some slight differences in the form of trading activity a trader is involved in, the trading routines were not entirely different. This is because irrespective of their form of trading activity they were all involved with customers, pricing and stocking of goods on a daily basis. This routine is reflected in their usage of the mobile phone for business purposes. From table 17 (page 148) the business uses is restricted to checking on prices, contacting customers and checking on the availability of goods in their distribution channel. Based on this, table 17 shows that all the traders on the average use their mobile phone for business with the same frequency as a t-test confirms no significant difference across gender, age

or educational levels of the respondents. This is a clear example of a routine shaping usage. The next routine to consider is the routine of caring for family.

In order to establish the routine of caring for family, the socio-demographic characteristics and the number of children of the traders were explored. From Table 19, close to half (47%) of the respondents were married and with children. Cumulatively, those who were married, divorced, widowed, separated and cohabiting constitute the majority of the respondents (67%) of which only 9% have no children. This supports the notion that the majority of respondents with children were married, cohabiting, widowed, separated or divorced. This shows that for the majority of the respondents coordinating the needs of their children is a major part of their daily routines. However, this is more of a routine for those who were married, cohabiting, or once married. Childbearing is not only a factor of marital status, but also a factor of age.

Table19: Marital Status and Number of Children[15]

		Number of Children									
		0		Less than 3		3 – 5		More than 5		Total	
		N	%	N	%	N	%	N	%	N	%
Marital Status	Married	**0[1]**	**0.0**	**85$_a$**	**69.7**	**83$_a$**	**78.3**	**4$_a$**	**50.0**	**172**	**47.4**
	Cohabiting	**9$_a$**	**7.1**	**9$_a$**	**7.4**	**2$_a$**	**1.9**	**0[1]**	**0.0**	**20**	**5.5**
	Widowed	**2$_a$**	**1.6**	**4$_a$**	**3.3**	**7$_{a,b}$**	**6.6**	**2$_b$**	**25.0**	**15**	**4.1**
	Never married	**77$_a$**	**60.6**	**4$_b$**	**3.3**	**0[1]**	**0.0**	**0[1]**	**0.0**	**81**	**22.3**
	In a stable relation	**37$_a$**	**29.1**	**3$_b$**	**2.5**	**0[1]**	**0.0**	**0[1]**	**0.0**	**40**	**11.0**
	Divorced	**0[1]**	**0.0**	**12$_a$**	**9.8**	**10$_a$**	**9.4**	**0[1]**	**0.0**	**22**	**6.1**
	Separated	**2$_a$**	**1.6**	**5$_{a,b}$**	**4.1**	**4$_{a,b}$**	**3.8**	**2$_b$**	**25.0**	**13**	**3.6**
	Total	**127**	**100**	**122**	**100**	**106**	**100**	**8**	**100**	**363**	**100**

Source: Researcher's Survey, 2013

Table 19 further shows that a greater proportion of those aged 35 years and older have more children than those younger. This confirms that those older were more likely to deal with issues relating to their children more frequently as part of their daily routines than those younger. By extension, the social routines of those older than 34 years were likely to be different from those younger than 35 years. This shows that child bearing is not only a factor of marital status, but also a factor of age.

Not only is age a major basis for differences in routines, educational level also has a similar difference. Table 20 shows that a greater proportion of those with educational levels lower than SSS/SHS were aged 35 years and above, while a greater proportion of those with educational levels from SSS and above were younger than 35 years. This shows that not only do those older than 34 years more likely to have children they were also more likely to have lower education

[15] Note: Values in the same row and sub table not sharing the same subscript are significantly different at p< 0.05 in the two-sided test of equality for column proportions. Tests assume equal variances.[2]
1. This category is not used in comparisons because its column proportion is equal to zero or one.
2. Tests are adjusted for all pairwise comparisons within a row of each innermost sub table using the Bonferroni correction.

consequently, their social routines were potentially different from those younger than 35 years. Table 18 shows that while there were no gender differences in terms of respondents applying the mobile phone to social uses, there were clear age and educational differences. As shown earlier, (Table 18) those older than 34 years tend to use their handset more for social uses than those younger than 35 years. This is consistent with educational levels of the respondents with those having educational levels lower than SSS/SHS applying the mobile phone more to social purpose than those with higher educational levels.

Table20: Age and Educational Level[16]

		Educational Level			
		Below SHS/SSS		SHS/SSS and above	
		N	%	N	%
Age	35 and above	**129_a**	**66**	**68_b**	**42**
	Below 35	**66_a**	**34**	**94_b**	**58**
	Total	**195**	**100**	**162**	**100**

Source: Researcher's Survey, 2013

In this chapter, we have come to realize that there were four forms of objectification as expressed by the traders' use of their handsets. By examining the biography of the handsets, objectification is revealed in the use of ringtones, handset design, fashion and handset usage. In objectification through ringtones it was established that there were four ringtones used by the traders which included religious, polyphonic, high-life-hip-life, sporty and political satires tones. However, the three most frequently used tones were the first listed ringtones with religious tones playing a dominant role across all ages, gender and educational background. Amongst these three

[16] Note: Values in the same row and sub table not sharing the same subscript are significantly different at $p< 0.05$ in the two-sided test of equality for column proportions. Tests assume equal variances.[1]
1. Tests are adjusted for all pairwise comparisons within a row of each innermost sub table using the Bonferroni correction.

dominant ringtones, polyphonic and high-life-hip-life tones showed clear significant age, gender and educational differences.

It was also gleaned from this chapter that certain ringtones accrued high social status value specifically, high-life-hip-life tones. These were so influential that those with the high-life-hip-life ringtones ensure that their handsets were always set to ring, however, the polyphonic tones were quickly put on silent or vibration to reduce any public ridicule from other traders. However, unlike religious ringtones all other ringtones were a function of age, gender and level of education.

The religious tones, however, played a unique role in the traders' life. This was often exhibited in the form of, praise and worship songs or prayers from the religious figures of the traders with their content expressing God's protection for their business, family, health and properties. This was done as a way of warding off evil spirits, thereby fitting perfectly into the spiritual routines that the traders' engage in prior to the start of the business day. Traders often confirmed engaging in some superstitious practices, such as reducing prices for the first customer of the day so as to set the trading day on a successful trading path. Consequently, every call they get they want the ringtone to profess these messages to all and sundry. It is worthy to note that these ringtones were personally chosen and downloaded onto the handsets by the owners or with the assistance of a third party. This points to the fact that people have moved away from relying on the predefined ringtones from the designer to choosing something they can identify with, and with which others can also identify them. Once again, an examination of the biography of the mobile phone using the ringtone has shown us how the mobile phone is an extension of the trader's self, an embodiment of who they were. This confirms that ringtones were increasingly

becoming an extension of the self, therefore, a look at the ringtones of the traders and one can tell the background of the person.

Objectification is not only restricted to ringtones but also the handset make. However, due to the high incidence of handset theft the traders, especially, female traders, those older than 34 years and those with low levels of education (below SHS) refrain from replacing their handsets until it is dysfunctional. Others also used low-end handsets because they hardly get stolen (see Figure 7). For those who use high-end handsets like the smart phones - which was the majority (56%) of respondents- they often keep them from view to ensure their safety. This shows that the trading context of the traders makes it difficult for them to be able to obtain any form of social status by physically displaying their handset. This is a departure from the evidence from other cultural settings, such as the youth in the developed world and among other general population of users amongst whom the physical display of the handset type validates the social status of the owner of the handset (Ling, 2004; Castells et al., 2006; Ling & Donner, 2008). One can conveniently conclude that the physical display of the handset as a form of objectification is not culturally universal.

Figure 7: Managing Theft

Source: A trader displaying her Handsets to the Researcher

Objectfication was also expressed in the form of fashion decisions of the handset owner. For instance, some male traders confirmed picking smaller handsets because they wanted to be able to keep them in their pockets, consequently, they bought clothes designed with deep pockets.

Female respondents, on the other hand, prefer choosing handbags that have side pockets. This shows the linkage between the fashion decisions and mobile phone handset purchasing decisions. Additionally, because mobile phone handset theft is a major challenge to the traders, and the second most popular reason for changing handsets over the years, the mobile phone is hardly left in the open, unless the individual has a use for it. Consequently, the notion of the handset as a "jewel" was not observed amongst the traders. An exploration the socio-demographic differences in handsets fashion influencing factors shows that, females were more likely to be influenced in their fashion decisions by their handset design than males. Additionally, those older than 34years were more greatly influenced in their fashion decisions by their handset's design than those younger than 35 years were. This is, however, not dependent on the traders' educational background. Consequently, implied in what Silverstone et al. (1994) call the appropriation stage is what they also called objectification (display for social status). However, some other aspect of objectification is also expressed in usage.

In mobile phone usage/function although five major social network apps were popular amongst the traders, Whatsapp and Facebook were the most frequently used apps. When respondents who use them were further engaged, they created the impression that they were better users of the mobile phone than those who do not use them. In other instances those who have heard about these features but do not know how to use them want to be associated with them by creating the impression that they use them. This fake attempt of usage typifies objectification (display) as it is latently seen as a valuable means for improving one's social standing amongst colleague traders.

Finally, the chapter dealt with the incorporation stage of the domestication process. It was revealed that due to the unique routines of the traders, four main usage patterns were identified.

Leading the pack was business use. Business use was largely based on the trading routines of the traders. These routines consisted of the daily dealings with customers, pricing and obtaining stock. The business uses of the mobile phone were woven into the business routines of the traders, with contacting customers using the mobile phone representing the leading usage of the mobile phone amongst the traders. It was therefore not surprising that traders' business had the same frequency with no significant difference per day irrespective of ones gender, age and level of education. The second most frequent usage was social use. Social use was driven by the family and parenting routines consequently those with lower educational levels who were more likely to be older with greater parenting and family responsibilities significantly used the mobile phone for social reasons more than any other group. It was the conclusion of this section that males older than 34 years with higher education were the most likely to use a wider array of the features of the mobile phone. It can be argued further that unlike previous studies that attempted to map out the general uses that owners of the mobile phone applied their handsets to, this study has shown that these users are shaped by the daily routines of the trader. Consequently, in areas where the routines of the traders differ, clear differences can be seen in how the traders applied the mobile phone. For instance, because social responsibilities increase with age, older users had greater social responsibilities, consequently, older traders used their handsets more for social issues than younger traders. Additionally, because there were no distinct differences in the degree of involvement in the business processes of the traders across all groups there were no significant differences in business use of the mobile phone. As a result of these, the incorporation stage, it can be argued, is largely driven by the routines of the traders' based on their gender, age, education as well as the trading context. This propels them to use the mobile phone for business, social, entertainment and social media uses.

CHAPTER SEVEN

CONVERSION OF THE MOBILE PHONE

7.1 Introduction

This chapter is devoted to exploring the various ways in which conversion plays out in the traders' relationship with the mobile phone. This section begins by examining conversion as part of the domestication process and how the process is exhibited in the traders' usage and display of the mobile phone. The next part of this section also shows how conversion is also a reflection of how attached the traders were to their mobile phone and what explains their attachment. This was achieved by first identifying the various forms of attachment by conducting Principal Component Analysis using the Mobile Phone Use Attachment Scale (MPUAS).

Once the various forms of mobile phone use attachment were identified, an independent t-test was employed to identify the possible demographic differences across the various identified factors. Attachment variables that had any significant demographic difference were retained for further analysis. Standard multiple regression analysis was employed to establish how much of the variation in the remaining attachment variables were accounted for by the demographic characteristics and four other independent variables. Each independent variable was analysed while controlling for the other remaining independent variables. The final analysis focuses on the context of the traders, the trading environment, and how that also affects their mobile phone use and conversion practices.

7.2 Conversion in Practice

The conversion stage is the next and final stage of the domestication process as explained by Silverstone et al. (1994). At this stage, the other social group members get to understand the

artefact in their broader understanding of the person using it. By extension, the conversion stage begins with the user having a particular meaning to translate to others; however, that meaning may not necessarily conform to the understanding that others may have of how the artefact fits into the life of the user. Conversion is often revealed in usage, display, and discussions. Through conversion, the device is displayed beyond the boundaries of the household or the private context while others get to talk about the device as a technology. Conversion deals with the public understanding of the household's (the individual's in the case of mobile phone) relationship with the gadget/artefact or object. Silverstone (1994:22) succinctly explains that

> "conversion, like appropriation, defines the relationship between the household and the outside world—the boundary across which artefacts and meanings, texts and technologies, pass as the household defines and claims for itself and its members a status in neighbourhood, work and peer groups in the 'wider society'".

In relating this to the mobile phone, mobile phones were now largely individualized technologies as such conversion of the mobile phone is more about defining the relationship between the individual and the other members of his/her social group based on how they view the individual's relationship with the mobile phone. Shekar (2009) confirms this by adding that, conversion is also about how the device is displayed and talked about as well as the attitude of the user as exhibited by his/her relationship with the gadget as seen by others. As a process, conversion is revealed in the implicit or explicit usage and display of the mobile phone. Either it ends in discussion by the user projecting what he/she wants others to think of his/her relationship with the handset or others will inform the user of how they interpret his relationship with the mobile phone. In so doing, users of the mobile phone often spearhead the conversion process. The mobile phone owner executes the conversion process in several ways by either showing others, explicitly or implicitly, what features they have on their handsets or by talking about it.

For instance, when a middle age respondent was observed talking on the mobile phone during the busy trading hours, the reaction of his colleague traders was informative. The moment the trader picked the call and exchanged greetings with the other person on the other end of the call others around him started saying:

> "Kwesi is always on his mobile phone. When will you let your mobile phone be? Unless he runs out credit he will talk and talk and talk. Leave your mobile phone alone and focus on selling your items".

All the other traders within the shared space of the trader in question equally shared this view of Kwesi's colleague. In this regard, others view Kwesi's conversion practice by the frequency of calls he makes and receives as well as the length of time he spends on each call. This form of conversion is a typical case of attachment to the handset.

Others were not that obsessed with their handsets. In the case of another trader, who is in her late 30s, the moment the interview process began others started saying:

> "Akos! No matter the number of times you call her she will not answer the call, because she always keeps her mobile phone deep in her hand bag or does not know her mobile phone is ringing".

Akos and Kwesi's conversion practices were both based on usage and from the interpretation that others place on their usage behaviour. Conversion emanates from the user. This is especially the case amongst the traders as some purchase their handset for trendy reasons thereby increasing their social status amongst their peers. However, it is the public display of such trendy features through usage that often carry more currency, especially showing off the model of handset they have obtained. In this regard, conversion is both a product of direct or indirect usage (incorporation) as well as display within the private-public boundaries of the user.

However, display and usage sometimes suffer in the trading environment of the traders. The market place environment is often engulfed in noise that prevents the traders from using some preferred features on their handsets. Apart from the regular activity of traders canvasing for the attention of prospective customers, there were two categories of noise making. One category consists of the big shops close to the retail market centre. These shops often have loud speakers loudly streaming out programmes from one FM station or the other. These public address systems were often active at all times.

Additionally, market preachers often place their loud speakers at vantage hearing points at the market preaching and playing gospel music throughout the entire trading day. This consequently reduces the ability of the traders to use some of their preferred sound reliant features like the radio to tune into their preferred FM programme or use any other multimedia function on their mobile phone. This therefore renders such features on their handsets inactive thereby reducing the frequency of their use of such features. These features were often available to all age groups and gender. This therefore leaves only those trendy features that were not necessarily sound dependent such as social media tools, and the internet: two set of tools that were highly valued by younger users. Conversion in terms of usage and display often find expression in terms of voice calls, browsing and social media usage. The usage of these tools were what users believe grants them increased status amongst their peers. However, other traders within the same social environment view the frequency in using such tools as different forms of attachment.

Apart from restricted usage in features, traders' reliance on owning a particular type of mobile phone handset as a means to improve one's social status is also hampered by the consistent occurrence of mobile phone theft. This also prevents the owners of such handsets from visibly

showing off their idolized gadgets. An observation made during the data collection stage was that almost all of the respondents owning smart phones kept their handsets away from view, with the men hiding them in their deep pockets and the women hiding them in the deep zippers of their bags. Mobile phone security has a much greater value than display within the Kantamanto trading context. These contextual issues therefore regulates how attached the traders were to their mobile phone thereby regulating their conversion practices. Attachment to the mobile phone is a product of conversion practices. Conversion therefore also signifies how attached the traders were to their mobile phone thereby making them "social cyborgs", when mobile phone and man becomes one.

I proceed to examine the conversion stage in terms of gadget and man becoming one, thereby making man a cyborg, the state of successful domestication. This often finds expression in different forms. To establish what form this takes, 15 items constituting the Mobile Phone Use Attachment (MPUAS) Scale was adapted from Bianchi and Phillips' (2005) mobile phone problem use scale with some modifications to suit the respondents. The 15 items were analysed using Principal Component Analysis (PCA) to establish the key factors driving this kind of expression - and how others view such attitudes in relation to their mobile phone usage. This section of the dissertation is devoted to exploring and establishing the attitudes of users as expressed by themselves and others in their social network.

In order to establish these expressions, the traders were asked to choose from a scale of 1 to 7, with 7 representing strongly agree, which of the statements best describes their relationship with the mobile phone during usage and display. Fifteen single items were included in the Mobile

Phone Attachment Scale. Each single-item was examined individually and collectively as a scale with the intention to establish the level of attachment that traders have with their handsets.

The fifteen items under the Mobile Phone Use Attachment Scale (MPUAS) were subjected to Principal Component Analysis (PCA) using PASW Version 18. Prior to performing PCA, the suitability of the data for factor analysis was assessed. Inspection of the correlation matrix revealed the presence of many coefficients of 0.5 and above. The Kaiser-Mayer-Oklin value was 0.78, exceeding the recommended value of 0.6 (Kaiser 1970, 974) and Bartlett's Test of Sphericity (Bartlett 1954), and reached statistical significance, supporting the factorability of the correlation matrix.

Principal Components Analysis revealed the presence of four components with eigenvalues exceeding 1, explaining, 23.7%, 16.4%, 8.9%, 8.6% and 6.8% of the variance respectively. An inspection of the scree plot revealed that after the fifth component the plot levels off. Using Catell's (1966) scree test, it was decided to retain five components for further investigation. This was further supported by the results of five components or factors. The five component solution explained a total of 64.3% of the variance. To assist in the interpretation of these two components, Varimax with Kaiser Normalization rotation was performed. The rotated solution revealed the presence of simple structure (Thurstone, 1947), with all five components, showing a number of strong loadings and all variables loading substantially on only one component.

Factor 1 was conceptualized as Obsession with Mobile Phone Use (OMPU) consisting of three variable loadings which included: "I can never spend enough time on my mobile phone", "I find myself occupied on my mobile phone when i should be doing other things and it causes problems" and "I lose sleep due to the time I spend on my mobile phone". All 3 variables had

factor 1 variable loadings of 0.83, 0.79 and 0.7 respectively. The total OMPU score ranged between 3 and 21. Factor 2 was conceptualized as Lack of Control over Mobile Phone Use (LCMPU). The study conceptualized factor 2 as Lack of Control over the mobile phone. It consisted of three variable loadings which included: "I find it difficult to switch off my mobile phone", "I feel anxious if I have not checked for messages or switched on my mobile phone for some time," and "I become irritable if I have to switch off my mobile phone for meetings". All three had factor loadings of 0.81, 0.72 and 0.69 respectively. The LCMPU total score ranged from 3 to 21

The third factor was referred to as negative consequences of use (NCU). This also comprised three variables such as "I have aches and pains that were associated with my mobile phone use", "I have been told that I spend too much time on my mobile phone than dealing with other more pressing issues", and "I have attempted to spend less time on my mobile phone but I am unable to". All these variables loaded strongly with 0.80, 0.72, 0.56 and 0.54 Varimax rotational loadings respectively. The NCU score ranged from4 to 28 The fourth factor, conceptualized as User Regulated (UR) also consisted of two variables: "I have specific time for handling my mobile phone calls", and "I always ignore my mobile phone during peak working hours". Both had 0.79 and 0.77 Varimax factor loadings. The UR score also ranged from 2 to 14. Finally, the fifth factor, also called the Means for Companionship in Isolation factor (MCI), included the following variables: "I have used my mobile phone to talk to others when I was feeling isolated" and "When out of range for some time, I become preoccupied with the thoughts of missing a call ". Both variables had 0.84 and 0.71 rotated Varimax factor loadings respectively. The MCI score also ranged from 2 to 14. The total obsession score based on all the factors ranged from 18 to

126. Table 21 confirms the factor loadings based on the Varimax rotation constituted the factor loadings based on the initial Eigenvalues. The results of the Varimax rotation in Table 21

Table21: Factor Loadings, Communalities (h2), and Percent of Variance for Principal Factors Extraction and Varimax Rotation on MPUA Items

Items	F^{17}_1	F_2	F_3	F_4	F_5	h^2
I can never spend enough time on my mobile phone	**0.832**	0.000	0.000	0.000	0.000	0.708
I find myself occupied on my mobile phone when i should be doing other things and it causes problems	**0.794**	0.000	0.000	0.000	0.000	0.699
I lose sleep due the time I spend on my mobile phone	**0.703**	0.000	0.000	0.000	0.000	0.588
I find it difficult to switch off my mobile phone	0.000	**0.810**	0.000	0.000	0.000	0.676
I feel anxious if i have not checked for messages or switched on my mobile phone for some time	0.000	**0.717**	0.000	0.000	0.000	0.781
I become irritable if i have to switch off my mobile phone for meetings (eg. church)	0.000	**0.694**	0.000	0.000	0.000	0.501
I have aches and pains that are associated with my mobile phone use	0.000	0.000	**0.795**	0.000	0.000	0.720
I have been told that i spend too much time on my mobile phone	0.000	0.000	**0.720**	0.000	0.000	0.701
There are times when I would rather use the mobile phone than deal with other more pressing issues	0.000	0.000	**0.560**	0.000	0.000	0.667
I have attempted to spend less time on my mobile phone but am unable to	0.000	0.000	**0.541**	0.000	0.000	0.519
I have specific time for handling my mobile phone calls	0.000	0.000	0.000	**0.787**	0.000	0.629
I always ignore my mobile phone during peak working hours	0.000	0.000	0.000	**0.770**	0.000	0.687
I often find myself talking on my mobile phone and attending to customers at the same time	0.000	0.000	0.000	0.000	0.000	0.643
I have used my mobile phone to talk to others when I was feeling isolated	0.000	0.000	0.000	0.000	**0.844**	0.673
When out of range for some time, i become preoccupied with the thoughts of missing a call	0.000	0.000	0.000	0.000	**0.712**	0.458
Percent of Variance	23.65	16.35	8.9	8.59	6.8	

Source: Researcher's Survey, 2013

[17] Factor Labels F1: Obsession with Mobile Phone Use (OMPU), F2: Lack of Control over Mobil Phone Use (LCMPU), F3:Negative consequences with mobile phone use (NC), F4: User Regulated (UR), F5:Means for companionship in Isolation (MCI)

Let us now examine the various levels of attachment to the mobile phone among the respondents. Two key analyses were employed: initially, an independent t–test was used to examine the demographic differences across the attachment factors. Secondly, demographic variables with significant difference were further examined as potential predictors in addition to four other independent variables using standard multiple regression in predicting mobile phone attachment levels irrespective of type of usage.

Table22: Demographic Differences Across MPUA Latent Variables (Factors)[18]

	Gender		Age		Education		
	Male	Female	35 and above	Below 35	Below SHS/SSS	SHS/SSS and above	Total
	Mean	Mean	Mean	Mean	Mean	Mean	Mean
Attachment by Obsession	**8.74_a**	**7.77_a**	**6.72_a**	**10.16_b**	**7.41_a**	**9.36_b**	**8.31**
Loss of control over mobile phone use (LCMPU)	**11.40_a**	**12.21_a**	**11.59_a**	**11.82_a**	**12.09_a**	**11.37_a**	**11.76**
Negative consequence	**9.75_a**	**9.43_a**	**8.98_a**	**10.20_a**	**9.27_a**	**9.99_a**	**9.61**
User Regulated	**7.65_a**	**9.13_b**	**8.03_a**	**8.66_a**	**8.95_a**	**7.55_b**	**8.31**
Means for companionship	**8.69_a**	**8.06_a**	**7.83_a**	**9.12_b**	**8.65_a**	**8.12_a**	**8.41**
Total Obsession	**60.94_a**	**63.13_a**	**58.83_a**	**65.18_b**	**62.58_a**	**61.13_a**	**61.91**

Source: Researcher's Survey, 2013

There were significant differences across three of the five factors. The first is the obsession factor. According to Table 22, significant differences exist across age and educational levels. For age, users below 35 years were more obsessed with their mobile phones than those older than 34 years were did. Additionally, those with SSS/SHS or higher educational levels were significantly more obsessed with their mobile phones than those with educational levels lower than SSS. The educational difference can, however, not be detached from the age difference of

[18] Values in the same row and sub table not sharing the same subscript are significantly different at $p< 0.05$ in the two-sided test of equality for column means. Tests assume equal variances. Tests are adjusted for all pairwise comparisons within a row of each innermost sub table using the Bonferroni correction.

the respondents as the majority of those with educational levels from SSS and higher were demographically younger than 35 years. It is therefore not surprising to find educational level differences once a significant age difference was established. The second factor with significant demographic difference is the User Regulated factor. Gender and educational levels were the only significant demographic features. This is the only factor that showed significant gender differences. From the table, female respondents have greater mobile phone regulatory power than male respondents. Additionally, those with educational levels lower than SSS also tend to have greater mobile phone regulatory power than those with higher educational levels. The reason for this can possibly be traced to evidence from Table 16, which showed that male respondents and respondents with educational levels higher than JSS had greater control over the operational and functional features of the mobile phone. This has the potential of reducing the level of attachment to the mobile phone by both females and those with lower educational levels (<SSS). For the final factor, that is, the means for companionship in isolation factor, it was established that those younger than 35 years significantly relied on the mobile phone as a means for companionship when in isolation than those older than 34 years. However, the total attachment score showed that only age had any significant difference with those younger than 35 years being more obsessed with their handset. This goes to show that age is an important factor in the conversion of mobile phone practices, especially when it has to do with obsession with the mobile phone and means for companionship in isolation. On the other hand, gender plays a significant role when one considers the mobile phone user's regulatory ability.

Considering that clear significant differences existed across age, gender, educational level and to some extent control over the operational and functional features of the mobile phone in terms of the respondents' obsession with their handsets. A standard multiple regression analysis was

employed to establish how well these variables predict the total obsession with the mobile phone and which of the variables is the best predictor for the various significant forms of mobile phone obsession.

A standard multiple regression analyses was used to assess the ability of age, gender, educational level, and control over operational and functional features to predict the levels of attachment with the mobile phone. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity as confirmed in the Appendix B which shows the normal p-p plot and the scatter diagram of the residuals. After the entry of the 7 independent variables, the total variance explained by the model as a whole was 9.6%, F (6, 348) = 6.169, (p<.001). In the final model, only three of the variables were statistically significant with age having the greatest predicting power with a beta of -0.178 (p<0.005), followed by influence of others in owning a mobile phone with beta 0.168 (p<0.005) and finally, control over the mobile phone operation also with beta of 0.113 (p<0.05).

Table23: Standard Multiple Regression Model of Independent variables Associated with Total MPUA

Independent Variables	B	*(SE)*	B
Control over the mobile phone operation	0.319	(0.16)	0.113*
Influence of others on owning a mobile phone	0.721	(0.23)	0.168**
Control over mobile phone operational functions	0.183	(0.12)	0.086
Age	-0.354	(0.11)	-0.178**
Gender	4.294	(2.20)	0.104
Education	-3.623	(2.21)	-0.088
Model: F(6,348)= 6.169**			
R^2= 0.096			

*P<0.05 **P<0.001

Source: Researcher's Survey, 2013

From this, it can be concluded that age had the strongest single unique contribution in explaining the total attachment to the mobile phone. This was followed by "influence of others in owning a mobile phone" and lastly "control over operational features of the handset". Other independent variables such as gender, educational level and control over the functions of the mobile phone had no significant explanatory power. This implies that younger users had greater control over the mobile phone. The result of this regression is presented in Table 23.

The process was repeated for the obsession, user regulated power and means for companionship in isolation variables. Each independent variable was examined using the standard multiple regression to assess the influence of age, gender, level of education, control over the operation of the mobile phone, control over the functional operation of the mobile phone and influence of others in owning a mobile phone. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity for all the three dependent variables as confirmed by the normal p-p plot and the scatter diagram of the residuals. For **obsession factor** as a sub variable after the entry of the 7 independent variables, the total variance explained by the model (all independent variables) as a whole was 11%, $F(6, 348)=7.201$, ($p<0.001$). In the final model, only two of the independent variables were statistically significant with age having the greatest predicting power when the other variable is controlled for with a beta -0.248($p<0.001$) and control over mobile phone operational function had a lesser impact with a beta of 0.126 ($p<0.05$). This implies that age had 24.8% of unique contribution as compared to 12.6% unique contribution of control over mobile phone operational function. This implies that younger owners (B= -0.139) with greater control over the mobile phone operational functions (B= 0.079) were more obsessed with their mobile phone. The result of this regression is presented in Table 24.

Table24: Standard Multiple Regression Model of Independent variables Associated with User Obsession

Independent Variable	B	(SE)	B
Control over the mobile phone operation	**0.009**	**0.045**	**0.011**
Influence of others on owning a mobile phone	**-0.010**	**0.063**	**-0.009**
Control over mobile phone operational function	**0.076**	**0.034**	**0.126***
Age	**-0.139**	**0.030**	**-0.248****
Gender	**0.037**	**0.613**	**0.003**
Education	**0.911**	**0.616**	**0.079**
Model: F (6, 348)=7.201**			
R^2=0.11			

*P<0.05 **P<0.001

Source: Researcher's Survey, 2013

For **user regulated factor**, it was identified that the total variance explained by the model was 9% F (6, 348) = 5.720 (p< 0.001). In the final model only three of the independent variables had any statistically significant predicting power with gender having the greatest predicting power when the other variables were controlled for with a beta of 0.20 (p< 0.001), followed by educational level with a beta of -0.193 (p<0.001) when the other variables were controlled for. The least influential variable was age with a beta of -0.132 (p<0.05) when the other variables were controlled for. This shows that older women with lower levels of education were able to regulate their handset better than other groups. The result of this regression is presented in Table 25.

Table25: Standard Multiple Regression Model of Independent variables Associated with User Regulated Power

Independent variable	B	(SE)	B
Control over the mobile phone operation	**0.050**	**0.033**	**0.087**
Influence of others on owning a mobile phone	**0.035**	**0.046**	**0.040**
Control over mobile phone operational function	**0.032**	**0.025**	**0.073**
Age	**-0.054**	**0.022**	**-0.132***
Gender	**1.690**	**0.452**	**0.200****
Education	**-1.629**	**0.454**	**-0.193****
Model: F (6, 348)=5.720**			
R^2=0.090			

*P<0.05 **P<0.001

Source: Researcher's Survey, 2013

The final factor to consider is the Means for Companionship in Isolation latent variable. It was established that the total variance explained by the model was 6% F (5, 349) =4.649(p<0.001). In the final model, three of the independent variables had statistical significance with age having the greatest unique impact when the other variables were controlled for with a beta of -0.212 (p<0.001). This was followed by influence of others on owning a mobile phone with a unique single contribution as confirmed by a beta of 0.128 (p<0.05) when other variables were controlled for. The least impactful independent variable was educational level with a unique single contribution with a beta of -0.118 (p<0.05) when other variables were controlled for. This shows that age of the traders has the greatest impact on the reliance on the mobile phone handset for companionship when they were in isolation. This implies that young traders who had greater influence from others in owning a mobile phone and had low education had the greatest dependency on the mobile phone for companionship when feeling isolated. The result of this regression is presented in Table 26.

Table 26: Standard Multiple Regression Model of Independent variables Associated with Means for Companionship in Isolation

Independent Variable	B	(SE)	B
Control over the mobile phone operation	**-0.021**	**0.031**	**-0.037**
Age	**-0.086**	**0.023**	**-0.212****
Influence of others on owning a mobile phone	**0.112**	**0.046**	**0.128***
Gender	**-0.550**	**0.452**	**-0.066**
Education	**-0.985**	**0.454**	**-0.118***
Model: F (5, 349)=4.649**			
R^2=0.06			

*P<0.05 **P<0.001

Source: Researcher's Survey, 2013

In conclusion, although conversion finds expression in the user's display and use of the mobile phone, it is also a function of the traders' attachment to their handset. However, if one considers the total attachment of the traders to the mobile phone, young traders were the ones who cannot virtually survive without their handsets. They fit the description for innovators Rogers (2003) although not based on length of usage but rather based on the form of usage. Earlier chapters further show that while young users and owners have not used the mobile phone as long as the older users they tend to use more features of the mobile phone and have greater control over the general and specific features of the handset. Consequently, they were the social teachers of how the changing features of the mobile phone handsets can be employed by all. This shows that innovation is not only a function of time, but also a function of degree of usage. Age also drives the use of the mobile phone when the trader is in isolation, especially for young users with lower levels of education with greater influence from others to own a mobile phone. This shows that conversion is expressed differently. While it is an expression of obsession and a means for

companionship when in isolation for young mobile phone users, it is also an expression of neglect of the mobile phone unless it becomes necessary for older users.

Conversely, the ability of the user to regulate the mobile phone usage is also a function of gender and to a lesser extent education. Female traders tend to have much greater control over their handsets. This is attributable to the fact that, as shown in earlier chapters, older female traders in particular tend to have lesser operational and functional control over their handsets; as a result, they have grown accustomed to ignoring their handsets unless it is very necessary to respond to calls. This low dependency on their handset is attributable to how poorly they have domesticated the technology. All these substantiate that conversion is mediated by age, gender, and educational, control over the operational functions of the mobile phone and the influence of others to own a mobile phone. It is therefore not just a matter of display and its resultant interpretation by others.

CHAPTER EIGHT

PATHS OF DOMESTICATION: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

8.1 Introduction

In this chapter, we summarise the key findings of this study by showing how they address the objectives of the study. We then proceed to show the various paths of domestication as exhibited by the findings of the study. This will be achieved by first tracing the paths for the young, older, male, female and educational level users. The final section will focus on some industry recommendations as well as recommendations for future studies.

8.2 Summary

This study begun by exploring the entire process involved in accessing and making the mobile phone an extension of ourselves, from the point of owning the technology to the point of deciding to dispose of it. The process was explored at five different but interwoven levels including, uptake, appropriation, objectification, incorporation and conversion. The qualitative-before-quantitative mixed method approach with a sample of 431 used-clothes traders was employed. The respondents were selected using the purposive, snowball and cluster sampling methods from Kantamanto market in Accra. After obtaining data using the in-depth interview and observational approaches from 11 traders, face-to-face interviews were conducted using the survey approach for 420 respondents with 86% response rate (363). . In order to achieve this, the study relied on the innovators and domestication process frameworks to explore the factors that influence the uptake of the mobile phone technology among traders. Through a historical assessment of the ownership of the mobile phone amongst the traders, an understanding of the

biography of the mobile phone uptake was derived. Through that, various factors were identified which made it possible to observe key changes in the ownership culture of the traders. Traders were no more getting handsets for the basic reason of making a mobile phone call. For the respondents, the most important reason for acquiring their current handsets is first to replace previously faulty handsets and secondly for improved functions. The findings showed that younger respondents were more likely than older respondents to abandon their handsets even if it is functional but lacks better functions. Additionally, trendy reasons for owning their current handset is more significant for those younger than 35 years than those older than 34 years were.

8.3 Uptake of the mobile phone

This aspect of the biography of the mobile phone throws several things into focus on the uptake of the mobile phone, first, as a gadget and then as a communication tool. Respondents of this study have shown that the mobile phone has a dual responsibility as a gadget and a tool for multiple purposes. Issues emanating from both purposes play significant roles in the uptake of a particular handset over the other. These significant roles were age dependent (X^2=**52.412, p<0.001**) with younger traders more concerned with improved functionality over the mere replacement of a handset because it is dysfunctional. This means very little for those older traders (above 34 years) as they were compelled to acquire their current handsets because of the dysfunctional status of their previous ones. All this implies that the design of the gadget plays a significant role for both young and old traders. However, it is more significant for those who were younger. Consequently, by looking at the biography of the mobile phone starting with the current handset owned, we glean from the data that while design of the handset plays a significant role in the uptake of a particular mobile phone it is more likely to be a feature for

younger owners of the handset. For older owners, this only happens when a previous handset is dysfunctional. Age might not be the only factor with significant differences for taking up a handset. Males differ from female respondents when it has to do with the need to have improved features and to be trendy. Males were significantly more likely than females to choose on the basis of improved functionality and trendiness of the handset. However, majority of both males and females decided to own their current handset first because they wanted to replace a previous faulty handset before any other purpose is considered. It is therefore not surprising that the reason for owning current handset is significantly associated with gender (X^2= **40.505, p<0.001**). This relationship is largely as a result of the significant gender difference for other reasons with the exception of replacing faulty handsets. Additionally, depending on how high ones education is the mobile phone handset will be abandoned when it finishes serving its purpose in the lives of its owners. However, purpose means different things to the respondents depending on their educational levels. For those with lower education this happens when the handset becomes dysfunctional, for those with higher education this happens when they were seeking handsets with improved functions.

The findings further show that those younger traders were more likely to change handsets in a year than any other age group. The frequency of handset change decreases as the ages of the respondents increases. Currently, on average the traders own one handset with the highest number of handsets owned by anyone being four. Although the average number of handsets currently owned may be one, in practical sense they function as more than one handset due to the presence of dual sim phones.

Additionally, not only do traders with higher education change their handsets more frequently, but they also own more handsets at a time than all other categories of education. It is therefore not surprising the frequency with which people now change handsets. Prior to this, the culture of sharing handsets within domestic and public spaces was the norm (Castells, 2006; Hahn & Kibora, 2008; Sey, 2011). Although sharing of handsets is still being practiced, the frequency has reduced, at least, among the respondents for this study. This is confirmed by the frequent nature of handset change over the years. Respondents prefer to purchase new handsets than choose to repair broken handsets or purchase used handsets also known as 'second-hand' – the practice of early days' mobile phone usage in Ghana (Hahn & Kibora, 2008) and other parts of Africa. Additionally, one third of the traders attributed their frequent changes in handsets to theft. This makes theft the second reason for the frequent change of handsets. This implies that for the traders issues such as the need for improved functions of new handsets, the trendy nature, as well as the aesthetic design of new handsets have very little influence on their decisions to change handsets over the period.

In investigating the choice of handsets, we come to the realization that mobile phones on their own as gadgets have interesting social attachment which is reflected in age, education and gender. Across all groups, changing handsets is a frequent phenomenon. However, younger users were more prone to this action than any other groups irrespective of their gender or level of education. These changes were often forced by theft and previous broken handsets; however, for young users, changing a handset was significantly necessitated by the need for improved and trendy features. Male respondents, especially those with high education, also gravitate towards the same preference. These abandoned handsets by the young users (below 35 but older than 14yeasr) were often either redistributed among users below 15 years and above 45 years or used

as back-up handsets during emergencies when they lose a preferred handset. Although traders were driven by the need to stay in touch or be available to their customers at all times in the initial uptake of the mobile phone, choosing one handset over the other is largely driven by theft and broken handsets especially for the users above 35 years, females and those with educational levels lower than SSS. For those younger than 35 years, who were male and with educational level higher than SSS, improved functions and trendiness were enough reasons to replace previous handsets.

In the early stages of the history of the mobile phone ownership and use amongst the traders, older users were the ones who introduced their households to the mobile phone thereby representing what Rogers (2003) called the innovators' group. However, the long presence of the mobile phone in the respective homes of the traders has seen this changed. With time, because the younger users change handsets for the want of improved and trendy features, they displaced the older users as innovators thereby pushing them further into the adoption model. This shows that the adoption model identified by Rogers (2003) operates differently for mobile phone ownership and use, at least in terms of those who constitute the innovators and early majority and the late majority groups. The one group of users who fit the laggards' explanation were the older users (those above the age of 44 years). The odds ratio (1.4) further shows that the odds for those above 34 years to change handsets over the years as result of previous dysfunctional handset is close to one and a half times as great as the odds of a younger trader changing handsets due to the same reason. Improved features and trendiness for changing handsets hardly drive them to change handsets. Not only were they older than 44 years they were also more likely to be females with lower education.

This can largely be attributed to the fact that the mobile phone only became easily accessible to increasing numbers of people in Ghana after the year 2000. It was not until 2005 that the prices of handsets significantly reduced. Consequently, only people who were employed could afford to own and manage a mobile phone before the 2005. Looking at the age groups, those older than 35 years were more likely to have been employed during that period of the emergence of the mobile phone in Ghana. Therefore, it is natural that older users, who have used the mobile phone the longest, were the likelier group to have introduced the mobile phone into their household context, especially when they had the wherewithal to purchase and manage a handset at the time.

This confirms that although the male respondents and their extended family relatives were more likely to have significantly introduced the mobile phone into their households, the households of the female traders' were much more likely to have been introduced to the mobile phone for the first time by their partners, themselves, and their children. This goes to show that cumulatively, female traders experienced the mobile phone in the household for the first time due to the activities of both nuclear and extended family relations who were males. On the other hand, extended family members introduced male traders to the mobile phone.

This suggests that female respondents were less likely to have been the first in their household to use a mobile phone for the first time. This confirms that in addition to young users, male respondents were more likely than female respondents to be "innovators" and "early adopters" of the mobile phone.

A look at the educational distribution of this shows that 19% of respondents of those with higher education, 1% more than those with lower education, rated the perceived mobile phone handset quality as the top feature they look out for in a handset. The top five features the traders look out

for before deciding to own one particular handset over the other in the order of importance includes: the perceived quality of the handset, radio, camera, size/ weight, and calculator. The least important features include torchlight, colour, data/WiFi access, and a phone just for calls. With the exception of the camera and data/WiFi features there is no significant level of education difference across the other features. Both camera and data features were more important for those with higher education.

This clearly shows that the mobile phone ceases to exist for traders as just a tool for making calls, to a tool with multiple features able to fit into the needs of the trader over and beyond the need to make and receive calls. Therefore one of the social consequences for the ubiquitous status of the mobile phone has to do with how the call function of the mobile phone is a taken for granted feature of the mobile phone among the traders. This points to the fact that currently a mobile phone means more than just a tool for communication. It is therefore not enough to have a handset that can make and receive calls: it must have the capacity to do more than that.

8.4 Appropriation

Appropriation was explored at three levels, with the first being the identification of significant others and their level of influence; secondly, the mode of ownership for mobile phone and finally, the expression of objectification in display. The uptake and the continual use of the mobile phone amongst the traders cannot exist without the assistance of significant others. According to the respondents of the study, this group is largely dominated by men, with husbands, male relatives and phone repairers dominating. These individuals assist in making a mobile phone purchase decision as well as managing the handset once it is in use. The study showed that although all traders identify phone repairers, partners, and male friends as the top

sources, a greater proportion of those older than 34 years chose these sources than those younger than 35 years. This, however, changes at the lower end of sources of influence as a greater proportion of those younger than 35 years identified close relatives as the sources of influence than those older than 34 years.

It also showed that while partners were more influential for female respondents male friends were more influential for male respondents. There were no significant proportional gender differences across all other sources of influence. A greater proportion of those who chose male friends as a source of information had educational levels lower than SHS/SSS. Alternatively, at the least influential end of sources of influence, a greater proportion of those with SSS and above levels of education were influenced by their fathers.

This shows that gender plays a major role when it has to do with consulting anyone for advice thereby revealing that that, for the traders, men were perceived to be a better source of valuable information than women on mobile phone ownership and management. Conspicuously missing from the list were adverts. This therefore confirms that at the imagination and appropriation stage marketers and designers of the handsets have very little influence on the respondents deciding to own a particular handset. The influence is largely from partners, friends, and handset repairers. This is particularly important for those who got their handsets as gifts, the majority of whom were females.

From the views of the contributors to the domestication theory, the imagination and appropriation stages of the domestication process places emphasis on how people get to purchase technology as a result of influences from marketers, designers and friends (Silverstone et al. 1994; Ling, 2004). This research shows that purchase is not the only way that these traders get to

become owners and users of mobile phones, they also ride on the culture of gift giving. This part of the domestication process needs to be expanded to include other modes of owning technology, such as gift giving which is a major feature in the Ghanaian context. This is more so because the majority of the traders have the habit of changing handsets for purposes other than discarding previously dysfunctional handsets. Rather these functional but less appealing handsets were given out as gifts to partners, children and parents or retained for use during emergencies when the preferred handset is stolen or missing. Although the traders looked down on purchasing slightly used handsets today, they saw nothing wrong with receiving the handsets as gifts from relatives who had once used them, thereby giving the handset a second lease of life. The handsets then become cross-generational artefacts, travelling from one generation of user to another within a short space of time.

During the appropriation stage, however, there were socio-demographic differences on how the mobile phone is owned. With reference to gender, while male traders were more likely to purchase their handsets, female traders mostly receive them as gifts. Those older than 34 years were more likely to purchase their handsets than obtain them as gifts. Additionally, choosing a handset is largely based on the perceived quality of the handset as well as the added feature of radio, camera and size/weight. However, camera and size/weight features were more significant for men and those younger than 35 than women and those older than 34years were in choosing a handset. Additionally, male traders than female traders were more likely to have been the source for their respective households experiencing the mobile phone for the first time. This chapter further shows that the average length of time for being a mobile phone user is 9 years for the traders, although both males and females have used the mobile phone for the same number of

years (9 years on the average), male traders have changed more handsets over the years than the females have. This shows that male traders change handsets more frequently than females do while female traders on the average use their handsets longer than their male counterparts do. The traders above the age of 24 years have used the mobile phone for significantly longer years than those below the 24 years. However, only those below 25 years change handsets more frequently per year than any other age group, on the average one handset per year (an average of 6 handsets over 6 years). The two top reasons for changing handsets over the years include, replacing faulty handsets and stolen handsets both accounting for 70% for the reasons in changing handsets over the years. It is therefore not surprising that the top feature they considered in owning their current handset is the perceived quality of the handset. In this regard, the mobile phone has an elastic process of adoption, which does not end with the first handset owned. For the traders, depending on the quality of the handset and theft one cannot prevent the annual changes of handsets. The indication is that in the context of the traders, the mobile phone appropriation moment is fluid and continuous. Additionally, at the imagination and appropriation stage, marketers and designers of the handsets have no influence on the respondents deciding to own a particular handset. The influence is largely from partners, friends, and handset repairers. This is particularly important for those who got their handsets as gifts.

8.5 Objectification

Under objectification, the study identified various ways that the traders expressed their handset display. The study identified four forms of objectification expressed by the trader's use of their handsets. By examining the biography of the handsets, objectification was revealed in the use of ringtones, handset design, fashion and handset usage. In objectification through ringtones it was established that there were four ringtones used by the traders which included religious,

polyphonic, high-life-hip-life, and sporty tones. However, the three most frequently used tones were the first listed ringtones with religious tones playing a dominant role across all ages, gender and educational background. Amongst these three dominant ringtones polyphonic and high-life-hip-life tones showed clear significant age, gender and educational differences. While males, younger users and those with higher education used more high-life-hip-life tones, females, older users and those with lower education used more polyphonic tones. To obtain social status credit those with the high-life-hip-life ringtones ensures that their handsets were always set to ring, however, the polyphonic tones were quickly put on silent or vibration to reduce any public ridicule from other traders. This shows that apart from religious tones, the other ringtones were all a function of age, gender and level of education. Additionally, despite their noisy environment these ringtones were either allowed to ring or placed on mute as a means to manage the trader's social status amongst other colleague traders.

The religious tones come in the form of praise and worship songs or prayers from the religious leaders of the traders with their content declaring God's protection for their business, family, health and properties. Consequently, every call they get they want the ringtone to profess these messages to all and sundry. It is important to note that these ringtones were personally chosen and downloaded onto the handsets by the owners or with the assistance of a third party. This reveal that people have moved away from relying on the predefined ringtones from the designer to choosing something they can identify with, and with which others can also identify them. Once again, an examination of the biography of the mobile phone using the ringtone has shown us how the mobile phone is an extension of the trader's self, an embodiment of who they were. This confirms that ringtones were increasingly becoming an extension of the self. A look at the ringtones of the traders tells the background of the person.

Objectification is not only restricted to ringtones but also the handset make. However, due to the high incidence of handset theft, the traders, especially, female traders, those older than 34 years and those with low levels of education (below SHS) refrain from replacing their handsets until it is dysfunctional. Others also used low-end handsets because they hardly get stolen. For those who use high-end handsets like the smart phones - which was the majority (56%) of respondents- they often keep them from view to ensure their safety. This shows that the trading context of the traders makes it difficult for them to be able to obtain any form of social status by physically displaying their handset.

Another issue of importance for objectification is fashion. Not only do traders display their handset in the form of their ringtones and the preferred features but it also informs them on their fashion decisions. For instance, some male traders confirmed picking smaller handsets because they wanted to be able to keep them in their pockets consequently, they often bought clothes designed with deep pockets. Female respondents, on the other hand, prefer choosing handbags that have side pockets. A confirmation that one way or the other fashion decisions were not separate from mobile phone handset purchasing decisions. Additionally, because mobile phone handset theft is a major challenge to the traders, and the second most popular reason for changing handsets over the years, the mobile phone is hardly left in the open, unless the individual has a use for it. Consequently, the age-old attitude of hanging the handset on the neck as a "jewel" was not observed amongst the traders (Overa, 2008; Asante, 2011; Sey, 2011). An exploration of the socio-demographic differences in handsets fashion influencing factor, reveals that females more than males were greatly influenced in their fashion decisions by their handset design. Additionally, those older than 34years were also greatly influenced in their fashion decisions by their handset's design than those younger than 35 years were. This is, however, not

dependent on the traders' educational background. Consequently, this clearly confirm that the link between appropriation and objectification is overlapping and cyclical in nature with age, gender and to some extent education mediating the process.

In mobile phone usage/function, although five major social network apps were popular amongst the traders, Whatsapp and Facebook were the most frequently used apps. When respondents who use them were further engaged they tended to create the impression that they were better users of the mobile phone than those who do not use these applications. In other instances, those who have heard about these features but do not know how to use them want to be associated with them by creating the impression that they use them. This mode of usage typifies objectification (display) as it is latently seen as a valuable means for improving one's social standing amongst colleague traders.

8.6 Incorporation

It was revealed that due to the unique routines of the traders, four main usage patterns were identified. Leading the pack was business use. Business uses were largely based on the trading routines of the traders. These routines consisted of the daily dealings with customers, pricing and obtaining stock. The business uses of the mobile phone were woven into the business routines of the traders, with contacting customers using the mobile phone representing the leading usage of the mobile phone amongst the traders. It was therefore not surprising that traders' mobile phone use for business had the same frequency per day with no significant difference irrespective of one's age, gender and level of education. The second most frequent usage was social uses. Social uses was driven by the family and parenting routines consequently those with lower educational levels who were more likely to be older with greater parenting and family responsibilities used

the mobile phone for social uses more than any other group. Other usages included entertainment and social media usage. This is the first time that these usage patterns were emerging at a market place. However, they were more a feature for young male traders with high levels of education. It was the conclusion of this section that males aged 35 years and older with higher education were the most likely to use a wider array of features of the mobile phone more frequently than other demographic users.

8.7 Conversion

Conversion finds expression in display and use of the mobile phone by the user. It is also a function of the traders' attachment to their handset. However, if one considers the total attachment of traders to the mobile phone, young traders were the ones that cannot essentially survive without their handset. They fit the description for innovators as described by Rogers (2003) although not based on length of usage but rather based on form of usage. Earlier chapters further show that while young users and owners have not used the mobile phone as long as the older users they tend to use more features of the mobile phone and have greater control over the general and specific features of the handset. Consequently, they were the social teachers of how the changing features of the mobile phone handsets can be employed by all. This is an indication that innovation is not only a function of time but also a function of degree of usage. Age also drives the use of the mobile phone when the trader is in isolation, especially for young users with low education with greater influence from others to own a mobile phone. This confirms that conversion is expressed differently. While it is an expression of obsession and a means for companionship when young mobile phone users feel isolated, it is also an expression of neglect of the mobile phone unless it becomes necessary for older users.

Conversely, the ability of the user to regulate mobile phone usage is also a function of gender and to a lesser extent education. Female traders tend to have greater control over their handsets. This is attributable to the fact that, as shown in earlier chapters, older female traders in particular tend to have lesser operational and functional control over their handsets; as a result, they have grown accustomed to ignoring their handsets unless it is very necessary to respond to calls. This low dependency on their handset is an indication that by routinizing those few features of the handset they have also succeeded in domesticating the mobile phone. All these show that conversion is mediated by age, gender, education, control over the operational functions of the mobile phone and the influence of others to own a mobile phone. It is therefore not just a matter of display and its resultant interpretation by others.

This study has shown that the domestication process is not linear but rather overlaps in a cyclical manner. Right from appropriation to conversion no domain is entirely unique and separate unto itself. This is shown at the objectification domain with elements from the objectification serving as a basis for appropriation. Secondly, appropriation as a domain is also defined by the context domesticating the technology as well as the nature of the technology. For instance, not all technological tools were purchased, there were some other forms of ownership such as gift giving and sharing which were defined by the cultural context. Consequently, this aspect of the domestication process should be expanded to mean more than just purchase. Additionally, the context of the traders as well as the means of owning a mobile phone showed that the significant others excludes advertisers but were based on referrals by male partners, friends and repairers. Additionally, objectification also is not restricted to just the physical display and aesthetics. It also includes public usage, especially, those of improved and trendy features like Whatsapp and Facebook which is part of incorporation.

8.8 Domestication Paths

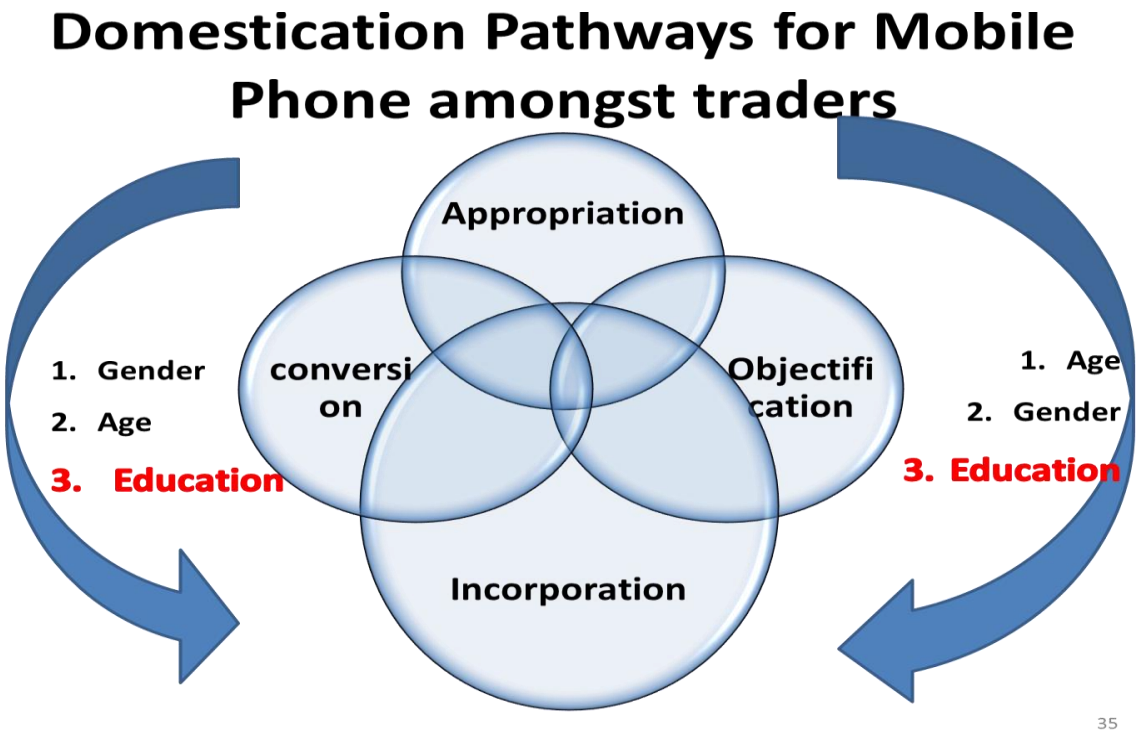
The above discussions is an indication that depending on an individual's age, gender and level of education different paths will be taken in domesticating the mobile phone. For instance, young traders receive their handsets as gifts but when they have to choose, they pick handsets with improved features and trendy functions. They prefer using religious and high-life ringtones but were quick to hide their handsets if they cannot employ any of these features to avoid ridicule. They were good at publicly displaying their social media skills. They were high entertainment and social media users as well as business users. They use more features of the handset than others. They were the most obsessed with lower ability to control their handsets. They were quick to abandon their handsets for want of one with improved features. With the exception of the self-financing of the ownership of their mobile phone, male traders and those with higher education use the same path.

However, this varies for older traders, and women. With the exception of self-finance, they get their handsets as gifts, but they largely choose a new handset only when their previous handset is dysfunctional for making calls. They prefer using religious and polyphonic tones, especially, the religious ringtone which often tells others which spiritual being is protecting their business and family. Apart from using the handset for business purposes, they apply their handsets to entertainment, and social media uses less. However, they were indirectly heavy social users. Once they were conversant with using a handset they have difficulty abandoning it until the handset becomes impossible to use for calls. They domesticate handsets for a longer time as they have low frequency of handset change over the years of usage. This confirm age, gender and education mediate the domestication process.

8.9 Contribution to knowledge

Gleaning from the entire report it is obvious that this study has made unique contributions to the existing literature on mobile phones and society. These are discussed under two broad perspectives: theoretical and empirical contributions. Beginning with the theoretical contributions the study made interesting observations about both the innovators and domestication process theoretical frameworks. For the innovators framework by Everette Rogers, the innovators were people who were driven by the desire to be the first to own or try out a new idea and willing to go through the disappointment that follows such ownership (Roger, 2003). However, age is a major determinant in the context of the traders trying out and consistently using new features. It is obvious from this background that younger traders will constitute the innovators at the market. Additionally, handset repairers and male traders who dominate the social support system providing technical support at all times to the traders consolidates the efforts of younger users as innovators. This shows clearly that depending on the cultural context innovators should also include those who are willing to explore and use new features of the mobile phone. For the domestication process, although the works of Silverstone et al noted the possible influence of gender and age on the domestication process, they failed to show how these characteristics mediate the domestication process.

Figure 8: Contextualized model of the domestication process



Source: Researcher's own creation (2014)

This study did not only show how the domestication process is mediated by age and gender it also added on a third variable, the educational attainment of the mobile phone owner. This can be attributed to the fact that in the developed world education happens to be a leveller, however, in the Ghanaian context, especially, at the market centre, educational attainment of the traders creates distinct opportunities for the traders. This can be linked to the ages of the traders, since older traders tend to have lower education thereby affecting the spectrum of features of the mobile phone handset they can employ. The study also confirms the overlapping cyclical progression of the domestication process as exhibited in the contextualized model (see figure 8). It also argues that, the domestication process for mobile phones in a social context can begin at any stage of the four key stages of the process. Therefore, these stages are culturally defined by the social context of the adoption and usage of the mobile phone handset. It is from this

background that this study contextualizes the four blocks of the domestication process in the market context as follows.

- Appropriation: The ownership of mobile phone(s) through the influence of others
- Objectification: The display of the mobile phone handset, usage and their intended and unintended consequences
- Incorporation: Structuring mobile phone use through daily routines
- Conversion: Expression of attachment to the mobile phone

Finally, this report shows how the domestication process can apply to other contexts other than the household thereby added on to the few studies employing this framework beyond the household social milieu. This study concludes that there is the need for the modification of the domestication theory to make it more accommodating of cultural interpretations in order to enhance its precision and predictive capacity.

The emerging themes from the empirical angle of this study are in three folds. The study has shown that the mobile phone as a gadget today has a unique set of biographies, which changes very frequently, thereby, making the mobile phone more than just a communication device. This calls for research into other features of the mobile phone that finds meaning in specific cultural context and how people deal with these rapid changes. Additionally, domestication of the mobile phone is not a one off process as the same handset can be re-domesticated several times in the life time of the handset based on the features of the handset that people find meaningful for their lives. Studies on the mobile phone and the society have ignored how the daily routines of users can shape mobile phone use. This study has shown that the uses of the mobile phone are not

random uses but are shaped by the daily routines of the traders. Consequently, by examining the daily routines of people one will understand why technologies, such as the mobile phone, are applied to specific uses. Finally, this study showed that when both males and females are engaged in the same sector of work there is no gender difference in application of the mobile phone to business purposes.

8.10 Recommendations

It is the recommendation of this study that since business use is the most dominant usage pattern and the majority of the traders were using Smartphones, applications targeted at their business processes should be developed by mobile app developers and made trader specific friendly. However, these applications stand to be ignored if significant others were not brought on board. This should include young users, male traders and mobile phone repairers. Once these applications become meaningful to these people and were routinized by them, they would be equipped to bring on board other traders from all ages, educational background and gender. However, it is only when the traders routinize these apps that the apps will find a place in their trading lives otherwise the apps risk being abandoned by them. If mobile banking services employ this same approach then it is likely to gain wider acceptance and usability. Attention should be paid to the different ways demographic groups' domesticate the mobile phone. For further studies, this investigator recommends a comparative case study to establish the impact that the context of the user affects the domestication process by comparing a higher literate society with that of those in the trading environment.

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APPENDIX A

Tests of Between-Subjects Effects
Dependent Variable:TotalMobileFunctionsUsed

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	4348.085[a]	9	483.121	4.416	.000	.103
Intercept	110974.618	1	110974.618	1014.394	.000	.746
Age	1389.154	4	347.289	3.174	.014	.035
Gender	1304.454	1	1304.454	11.924	.001	.033
Age * Gender	1501.615	4	375.404	3.431	.009	.038
Error	37742.975	345	109.400			
Total	349586.000	355				
Corrected Total	42091.059	354				

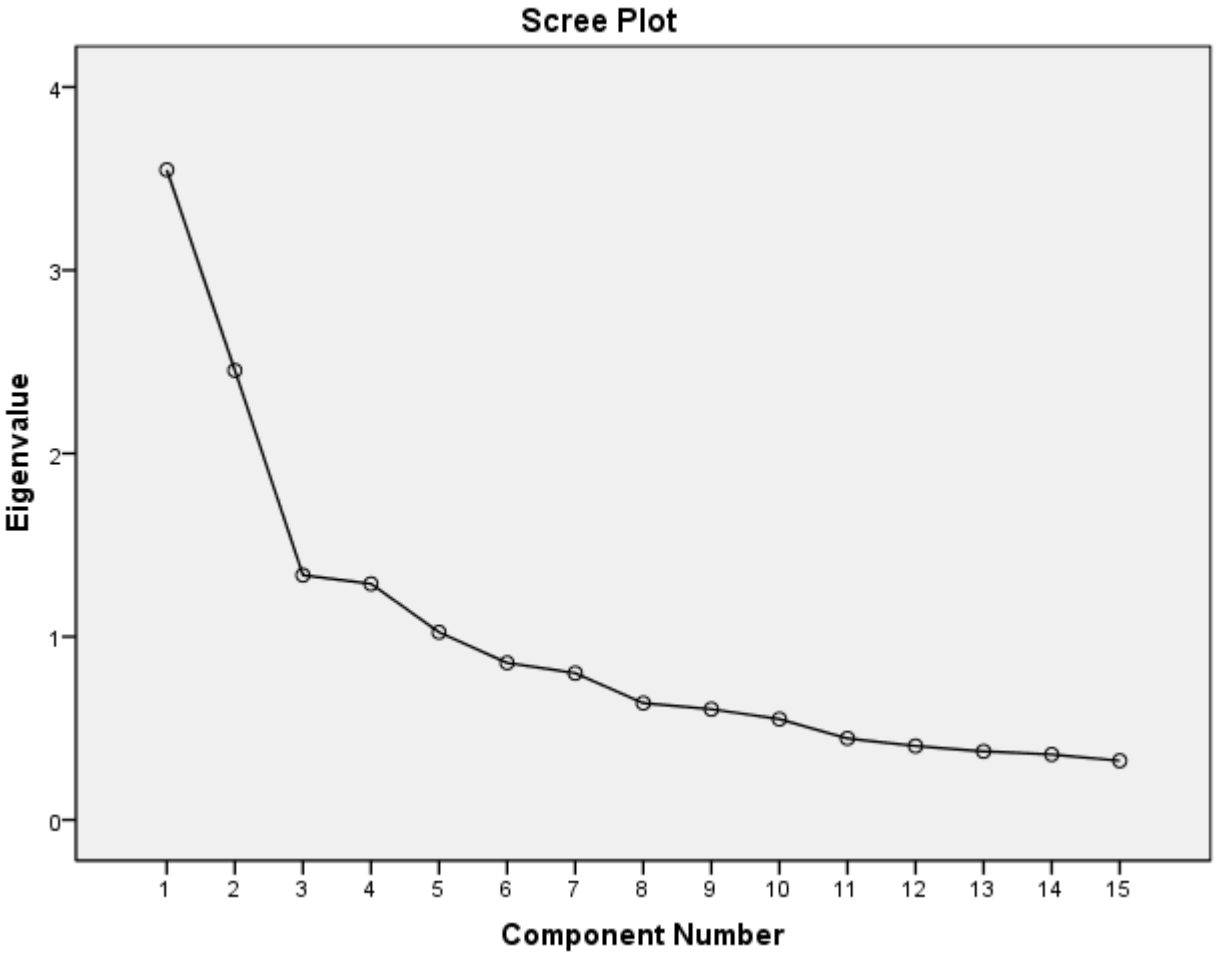
a. R Squared = .103 (Adjusted R Squared = .080)

Multiple Comparisons
TotalMobileFunctionsUsed
Tukey HSD

(I) Age		(J) Age					95% Confidence Interval	
				Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
dimension2	15 - 24	dimension3	25 - 34	.3549	1.73276	1.000	-4.3968	5.1066
			35 - 44	4.9334*	1.67378	.028	.3434	9.5233
			45 - 54	5.0404	1.93459	.072	-.2648	10.3455
			54+	10.0121*	3.21476	.017	1.1964	18.8279
	25 - 34	dimension3	15 - 24	-.3549	1.73276	1.000	-5.1066	4.3968
			35 - 44	4.5785*	1.40194	.010	.7340	8.4230
			45 - 54	4.6855*	1.70485	.049	.0103	9.3606
			54+	9.6573*	3.08197	.016	1.2057	18.1088
	35 - 44	dimension3	15 - 24	-4.9334*	1.67378	.028	-9.5233	-.3434
			25 - 34	-4.5785*	1.40194	.010	-8.4230	-.7340
			45 - 54	.1070	1.64487	1.000	-4.4037	4.6176
			54+	5.0788	3.04920	.457	-3.2829	13.4405
	45 - 54	dimension3	15 - 24	-5.0404	1.93459	.072	-10.3455	.2648
			25 - 34	-4.6855*	1.70485	.049	-9.3606	-.0103
			35 - 44	-.1070	1.64487	1.000	-4.6176	4.4037
			54+	4.9718	3.19980	.528	-3.8029	13.7465
	54+	dimension3	15 - 24	-10.0121*	3.21476	.017	-18.8279	-1.1964
			25 - 34	-9.6573*	3.08197	.016	-18.1088	-1.2057
			35 - 44	-5.0788	3.04920	.457	-13.4405	3.2829
			45 - 54	-4.9718	3.19980	.528	-13.7465	3.8029

Based on observed means.
The error term is Mean Square(Error) = 109.400.
*. The mean difference is significant at the .05 level.

APPENDIX B



APPENDIX C

INTERVIEW GUIDE FOR DOMESTICATION OF MOBILE PHONES STUDY

1. How will you describe your lifestyle as a person?(circle of friends, expression of fashion, entertainment, level of religiosity [church attendance], interest in media issues, music, movies, funerals, parties, other occasions, level of attachment and taste of radio programmes, closeness to family members, membership in associations? Are you an outgoing or reserved person?
2. How did you come by your current mobile phone?
3. How long have you been a mobile phone owner and user?
4. Why that long?
5. How many mobile phones have you owned over the period and what accounted for your need to change from one particular hand set for another, and from one network to the other?
6. What is the history of mobile phone ownership in your family?
7. What is the current status of mobile phone ownership in your family?
8. Who do you usually talk to when you want to make technology decisions (buy, repair and maintenance)?
9. Why do you consult such a person?
10. Who did you consult before deciding on owning your first mobile phone?
11. What finally convinced you to own a mobile phone?
12. Who did you consult before deciding on which phone you should own currently?
13. What are the functions on your phone and which one do you use?
14. In a day how will you describe your mobile phone routine?
15. What are the changes you have observed concerning your daily routines (relationship with family members and friends, entertainment, work, obtaining information, and fashion) since you began using the mobile phone?

16. In your personal ownership history in owning a mobile phone what will you finally say pushed you into owning a mobile phone?

17. Was there ever a time you thought you have had enough of owning a mobile phone and you wished you did not have a mobile phone? Explain the events that informed this thought

18. Was there ever a time you thought you did not need a mobile phone and why?

19. Do you share your phone? Or do you share anyone's mobile phone? Who?

20. In your daily apparel how do you display your mobile phone as part of you dressing up?

21. History of mobile phone ownership?

22. What can you do with your mobile phone today that you were not able to do in the past?

23. Over the years of ownership what are the changes you can point to in terms of using your mobile phone beginning from the first time you owned a mobile phone to date?

24. Has there ever been any instance that you felt you had to control how you use your mobile phone? Explain

25. What are the instances you felt your mobile phone was interfering with other activities that you were engaged in?

26. How did you deal with that interference?

27. Do you remember the first day you had your first mobile phone? Kindly explain what your initial reaction was when you owned your first mobile phone?

28. How did you figure out how to operate the functions (including calling) of the mobile phone?

29. How did you figure out which other functions (apart from calling) of the mobile phone were important to you?

30. Are these functions still important and why?

31. Over the years have you seen changes in the kind of functions of the mobile phone you find to be necessary? And what are these changes?

32. What are the functions of your current mobile phone that you find to be important for you today?

33. Do you have any specific time for not using your mobile phone?

34. Do you have any spoken / unspoken set of rules concerning how you use your mobile phone in a domestic environment (home and work)?

35. How were these rules developed?

36. What are the functions on your mobile phone?

37. Which of them do you use daily, weekly, monthly, yearly and never?

APPENDIX D

QUESTIONNAIRE

Dear respondent,

My name is Rabiu Kwaku Boakye Asante, a PhD candidate with the Department of Sociology, at the University of Ghana. I am conducting a study titled **Domestication of the mobile phone amongst Kantamanto used-clothes traders in Accra**. I hereby invite you to participate in this study. Any information you provide will be treated confidential and cannot be traced to you. The information you provide will be used purely for academic purposes. The data obtained from this study will be password protected and will not be made available to any second and/or third parties. You are also not obliged to answer all questions, especially the ones you feel uncomfortable to answer. If by any reason, you do not want to continue answering any of the questions you can choose to discontinue your participation in the study. Thank you very much for giving me your attention.

Yours sincerely,

Rabiu Kwaku Boakye Asante
PhD Candidate
Department of Sociology
University of Ghana

1. Gender
   a. Male [ ]
   b. Female [ ]
2. Form of trading activity
   a. Importer [ ]
   b. Retailer with stall [ ]
   c. Hawker [ ]
   d. Stall attendant [ ]
3. How long have you been in this type of business: _____
4.

Indicate your response by circling the corresponding number in reference to the following statements on **what finally convinced you to own a mobile phone the first time.**

A	**From the following questions below select your response to the influence of others on you**	Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
1	People who influence my behaviour think that I should use a mobile phone	1	2	3	4	5	6	7
2	People who are important to me think that I should use the	1	2	3	4	5	6	7

	mobile phone							
B	**From the following questions below select your response to Knowledge on use of mobile phone:**							
3	I have control over using the mobile phone	1	2	3	4	5	6	7
4	I have the resources necessary to use the mobile phone	1	2	3	4	5	6	7
5	I have the knowledge necessary to use the mobile phone	1	2	3	4	5	6	7
6	I can complete the job of using other functions of the mobile phone apart from calling …	1	2	3	4	5	6	7
7	... if there were no one around to tell me what to do as I go	1	2	3	4	5	6	7
8	... if I had never used a	1	2	3	4	5	6	7

	mobile phone like this before							
9	... if I had only the mobile phone manual for reference	1	2	3	4	5	6	7
10	... if i had seen someone else using it before trying it myself	1	2	3	4	5	6	7
11	... if I could call someone for help if i got stuck	1	2	3	4	5	6	7

5.

Indicate your response by circling the corresponding number in reference to the following statements **on usage**…								
C	**I use my mobile phone for...**	Not at all	At least once a year	At least once every few months	At least once a month	At least once a week	At least once a day	At least 5 times a day
1	Voice calls	1	2	3	4	5	6	7
2	SMS	1	2	3	4	5	6	7
3	Send and Receive emails							
4	Entertainment	1	2	3	4	5	6	7
5	Visit websites and browse or	1	2	3	4	5	6	7

	search the internet							
6	Mobile Money Transfer	1	2	3	4	5	6	7
7	Visiting social network apps	1	2	3	4	5	6	7
8	Alarm	1	2	3	4	5	6	7
9	Keeping time	1	2	3	4	5	6	7
10	Calculating	1	2	3	4	5	6	7

6.

Indicate your response by circling the corresponding number in reference to the following statements on **usage**…								
D	**For entertainment**, i use my mobile phone for ...	Not at all	At least once a year	At least once every few months	At least once a month	At least once a week	At least once a day	At least 5 times a day
1	Radio	1	2	3	4	5	6	7
2	Game	1	2	3	4	5	6	7
3	Ringtones	1	2	3	4	5	6	7
4	Play music	1	2	3	4	5	6	7
5	Watch pictures	1	2	3	4	5	6	7

6	Take pictures	1	2	3	4	5	6	7
7	Video Recording	1	2	3	4	5	6	7

7.

Indicate your response by circling the corresponding number in reference to the following statements **on usage**…								
E	**For social network apps**, I visit...	Not at all	At least once a year	At least once every few months	At least once a month	At least once a week	At least once a day	At least 5 times a day
1	Facebook	1	2	3	4	5	6	7
2	Whatsapp	1	2	3	4	5	6	7
3	Twitter	1	2	3	4	5	6	7
4	You tube	1	2	3	4	5	6	7
5	Skype	1	2	3	4	5	6	7
6	Google+	1	2	3	4	5	6	7

8.

Indicate your response by circling the corresponding number in reference to the following statements on **usage…**								
F	For **business and social uses,** I	Not at	At least	At least	At least	At least	At least	At least

	use to…	all	once a year	once every few months	once a month	once a week	once a day	5 times a day
1	Contact customers	1	2	3	4	5	6	7
2	Check on prices	1	2	3	4	5	6	7
3	Check on location of goods with best prices	1	2	3	4	5	6	7
4	Check on children at school and at home	1	2	3	4	5	6	7
5	Get in touch with extended family relation	1	2	3	4	5	6	7
6	Check on partner for household Coordination	1	2	3	4	5	6	7

9.

Indicate your response by circling the corresponding number in reference to the following statements **household technology ownership status**…			
F	In my household, we own...	Yes	No
1	Television	1	2

2	Radio/ stereo	1	2
3	Electric Iron	1	2
4	Desktop	1	2
5	Computer	1	2
6	Landline	1	2
7	Telephone	1	2
8	Mobile phone	1	2
9	DVD	1	2
10	Fridge	1	2
11	Sewing Machine	1	2
12	Private car	1	2
13	Laptop	1	2
14	Smart phone	1	2
15	Rice cooker	1	2
16	Micro wave	1	2
17	Washing machine	1	2

10.

Indicate your response by circling the corresponding number in reference to the following statements on **attachment to mobile phone use** …								
G	**Attachment to mobile phone use**	Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
1	I can never spend enough time on my mobile phone	1	2	3	4	5	6	7
2	I find myself occupied on my mobile phone when I should be doing other things and it causes problems	1	2	3	4	5	6	7
3	I lose sleep due the time I spend on my mobile phone	1	2	3	4	5	6	7
4	When out of range for some time, I become preoccupied with the thoughts of missing a call	1	2	3	4	5	6	7
5	I have used my mobile phone to talk to others when I was feeling isolated	1	2	3	4	5	6	7

6	I have attempted to spend less time on my mobile phone but am unable to	1	2	3	4	5	6	7
7	I find it difficult to switch off my mobile phone							
8	I feel anxious if i have not checked for messages or switched on my mobile phone for some time							
9								
10	My friends and family complain about my use of the mobile phone							
11	I have aches and pains that are associated with my mobile phone use							
12	There are times when I would rather use the mobile phone than deal with other more							

	pressing issues							
13	My friends and family don't like it when my mobile phone is switched off							
14	I have been told that I spend too much time on my mobile Phone I become irritable if have to switch off my mobile phone for meetings (eg. church)							
15	I see the mobile phone as a detractor during peak working hours							
16	I always ignore my mobile phone during peak working hours							
17	I have specific time for handling my mobile phone calls							
18	I often find myself talking on							

	my mobile phone and attending to customers at the same time							

11.

Select as many as applies to the question… What do you consider before buying a mobile phone handset			
H	What do you consider before buying a mobile phone handset?	Yes	No
1	Radio	1	2
2	Touch light	1	2
3	Camera	1	2
4	Size/ weight	1	2
5	Colour	1	2
6	WiFi / Data access	1	2
7	Calculator	1	2
8	Perceived mobile phone handset quality	1	2
9	Other specify:	_____	

12.

Indicate your response by circling the corresponding number in reference to the following statements on **mobile phone and fashion usage**…								
I	My mobile phone handset design makes me decide whether...	Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
1	...I should carry a bag	1	2	3	4	5	6	7
2	...I should wear a watch	1	2	3	4	5	6	7
3	... I should wear a necklace	1	2	3	4	5	6	7
4	...I should wear a hand band	1	2	3	4	5	6	7
5	...I should wear a belt	1	2	3	4	5	6	7

13.

Select as many as applies to the question…			
J	Who/ what do you consult before making any mobile phone decisions concerning purchase, maintenance and repairs?	Yes	No
1	Partner	1	2
2	Male friend	1	2
3	Female friend	1	2

4	Father	1	2
5	Mother	1	2
6	Sister	1	2
7	Brother	1	2
8	Phone repairer	1	2
9	Other specify:	_____	

14. How much does a bale cost for your business? _____
15. How many pieces of items does a bale / stock contain?_____
16. At what minimum price do you sell each item?_____
17. How often do you buy a bale for your stall/ business?_____
18. How much do you spend on credits per week?_____
19. How did you come by your current mobile phone?
    1. Self-financed [ ]
    2. Gift from partner [ ]
    3. Gift from children [ ]
    4. Other specify:_____
20. How long have you been a mobile phone owner?_____
21. Which members of your household own a mobile phone? (Select as many as applies)
    1. Self [ ]
    2. Partner [ ]
    3. Child/ Children [ ]

4. Sibling [ ]
5. Parent [ ]
6. External relative [ ]
7. Other specify:_____

22. How long has the person been using a mobile phone?_____
23. How many mobile phone handsets have you changed over the years? _____
24. What accounted for the changes in handsets? (Multi-select)
    1. Faulty handsets [ ]
    2. Improved functionality [ ]
    3. Trendy [ ]
    4. Aesthetics [ ]
    5. Got stolen [ ]
    6. Other specify:_____
25. How many mobile phone handsets do you currently own?_____
26. What convinced you to own your current main handset?
    1. Previous faulty handsets [ ]
    2. Improved functionality [ ]
    3. Trendiness [ ]
    4. Aesthetics [ ]
    5. No room for choice because it was a gift [ ]
    6. Other specify:_____
27. How many functional networks do you own?_____
28. Why do you own that number of networks?_____
    1. To be reachable at all times [ ]
    2. To benefit from different pricing policies [ ]
    3. Most of my contacts have a particular network [ ]
    4. I have a 2-sim handset [ ]

5. Other specify:_____

29. Age of respondent_____
30. Level of education of respondent
    1. No education [ ]
    2. Primary [ ]
    3. JSS/JHS [ ]
    4. SSS/SHS [ ]
    5. Tertiary [ ]
    6. Other specify: _____
31. Marital Status of respondent
    1. Married [ ]
    2. Cohabiting [ ]
    3. Widowed [ ] if selected jump to question 40
    4. Divorced [ ] if selected jump to question 40
    5. Separated [ ] if selected jump to question 40
    6. In a stable relationship [ ]
    7. Never married [ ] if selected jump to question 40
32. How old is your partner? _____
33. How many years has your partner been a mobile phone owner (user)?_____
34. What is the highest level of education completed by your partner?
    1. No education [ ]
    2. Primary [ ]
    3. JSS/JHS [ ]
    4. SSS/SHS [ ]
    5. Tertiary [ ]
    6. Other specify: _____
35. What is your partner's occupation? _____

36. Do you have any children? _____
    1. Yes [ ]
    2. No [ ] jump to question 43
37. How many children do you have?_____
38. How many of your children own a mobile phone?_____
39. Which of your children was the first to own a mobile phone?_____
40. How long has he/she been using a mobile phone?_____
41. How did he or she come by the mobile phone?_____
    1. A gift from us the parents [ ]
    2. He/she self-financed it [ ]
    3. Gift from someone else [ ]
    4. Other specify: _____
42. Who pays for the talk time for your children who own mobile phone?
    1. Their father [ ]
    2. Their mother [ ]
    3. Themselves [ ]
    4. Other specify:_____
43.

Indicate your response by circling the corresponding number in reference to the following statements on **mobile phone ringtones**								
K	My ringtone is...	Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
1	... Sporty tones	1	2	3	4	5	6	7
2	... Religious	1	2	3	4	5	6	7

3	...Hip life High life	1	2	3	4	5	6	7
4	... Politically related	1	2	3	4	5	6	7
5	… Polyphonic	1	2	3	4	5	6	7

44.

Indicate your response by circling the corresponding number in reference to the following statements **on lifestyles**								
L	I consider myself as someone who...	Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
1	is very out going	1	2	3	4	5	6	7
2	is a lover of music	1	2	3	4	5	6	7
3	attend funerals	1	2	3	4	5	6	7
4	attend parties	1	2	3	4	5	6	7
5	is an active member of a religious group	1	2	3	4	5	6	7
6	attend weddings	1	2	3	4	5	6	7
7	is a lover of radio programmes	1	2	3	4	5	6	7
8	an active member of a non-religious group	1	2	3	4	5	6	7

9	a lover of fashion	1	2	3	4	5	6	7
10	keeps to him/herself	1	2	3	4	5	6	7
11	loves sports	1	2	3	4	5	6	7
12	loves television programmes	1	2	3	4	5	6	7
13	loves religious activities	1	2	3	4	5	6	7

45. Can you provide me with your mobile phone number of your main network?
    5. Yes [ ]
    6. No [ ]
46. What is you religious affiliation?
    7. Orthodox Christian [ ]
    8. Charismatic/ Pentecostal Christian [ ]
    9. Other Christian [ ]
    10. Muslim [ ]
    11. Traditionalist [ ]
    12. No religion [ ]
    13. Other specify:_____
47. Can I take a picture of your mobile phone handset?
    14. Yes [ ]
    15. No [ ]

THANK YOU!!!