

**FACTORS CONTRIBUTING TO THE PENETRATION AND USE OF  
SMARTPHONES IN WESTLANDS KENYA**

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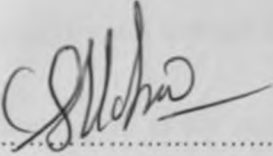
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**A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS  
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AWARD OF THE DEGREE OF MASTER OF BUSINESS  
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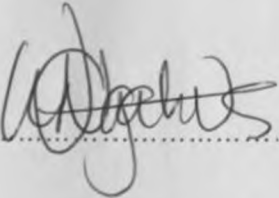
## DECLARATION

This research project is my original work and has not been presented for examination to any other universities.

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This research project has been submitted for examination with my approval as a University Supervisor.

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Above all, thanks to my God because of the unwavering provision, love and protection in all moment of lack and despair, fear and discouragement.

My special gratitude goes to my supervisor Ms. Catherine Ngahu who tirelessly through his effort, experience, expertise and initiative guided me through the whole process.

I would like to acknowledge all the MBA students, colleagues, friends and my family especially for their moral and material support for the completion of this project. Individually I take the formatting errors that would be spotted in this script.

## DEDICATION

This project is dedicated to my Lecturer Ms. Catherine Ngahu of the University of Nairobi School of Business for her tireless efforts of supporting me academically until I completed my project within the stipulated timeframe.

Also I dedicate this project to my parents ( Mr. and Mrs. Gachanja) my wife Ms. Eddah and two sons George and Skever for their moral support during the challenging moments of pursuing the MBA program

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## ABSTRACT

In order to keep up with the competition and changing consumer needs and wants in the competitive business environment, Smartphone manufacturers need position their products effectively in the market in order to achieve their long term objectives. Positioning strategies should be based on the Product, price, place and promotion.

The objective of the study was to determine the factors that contribute to the penetration and use of SmartPhones in Westlands, Nairobi Kenya. In methodology, the study adopted a descriptive survey. The target population for this study was Smartphone users and owners in Kenya. This study utilized an online questionnaire as the data collection tool. Data collected was analyzed through descriptive statistics with the help of SPSS.

The study established that most of the consumers were influenced by their friends and family members to purchase a smart phone. The study identified that the fascinating features of the Smartphone which included aesthetics, design and appearance increased the usage and penetration of the Smartphone in the market. It was established that Social class played a major role in the usage and penetration of the Smartphone in the market. It was established that business application features of the Smartphoned increased the usage and penetration of the Smartphone in the market.

The study found out that Smartphones were perceived as expensive and targeted a particular social class. Therefore, the study recommends that the government should intervene by reducing levies charged on mobile phone dealers thus making it easier for ordinary Kenyans to purchase Smartphones.

## CHAPTER ONE: INTRODUCTION

### 1.1 Background of the Study

Technological advances, such as wireless applications, have had a profound impact on communications all over the world resulting in the development of new technologies to transcend distance and time. The mobile phone industry has impacted on the social behaviour of consumers in terms of purchasing behaviour and lifestyles. A priority of this industry is to keep abreast of changes in the business environment, to identify new market opportunities and threats, and to ultimately increase profitability. "Coping with the constantly changing environment is probably the most important determinant of a company's success or failure in a free enterprise (Kuratko and Hodgetts, 2008:193)." The environment has an enormous impact on the mobile market as far as the technological, economic, social, politico-governmental and international environments are concerned.

Over the last few years the use of mobile phones has increased dramatically throughout the world, where mobile phones and services are already a multi-billion rand industry. Worldwide it is estimated that there are over 5.3 billion mobile subscribers of which almost 4 billion are in the developing world (ITU, 2010b). For developing countries, the digital divide in terms of access has begun to close with the flow of digital information through core mobile services even in the poorest of countries. This offers the potential to capitalize on the economic benefits and improvements in quality of life that can come about with improved communications (Rashid and Elder, 2009).

In addition the rapid spread of this innovation in developing countries also paves the way for greater connectivity and access to the other services via mobile devices and diffusing of value-added services such as mobile banking. Mobile phone usage has proliferated in recent years. Some areas of the world have enjoyed rapid deployment and high penetration of mobile telephony. 70% of the world's population own at least one mobile phone (Harman and Koohang, 2006). The market penetration of modern smart-phone devices is growing steadily.

Information and communication technology (ICT) is pervading modern life and has become a general-purpose technology. Its impact on the growth of modern economies has taken place in different waves. The year 2002 marked an important turning point in the history of information and communication technologies: the total number of mobile subscribers overtook the number of fixed lines on a global scale (Wei and Lo, 2006).

Moreover, with the advent of personalized and always-on communications, the impact of technology on the socio-economic landscape is becoming more and more significant. The widespread use of mobile phones has affected the way in which humans learn, interact and socialize. The use of mobile phones has triggered consumer market demand as it forms a new dimension of virtual mobility to a continuing trend for geographically extended, faster and more personalized social interaction (Wei and Lo, 2006).

In recent years, the mobile phone has evolved from essentially an interpersonal communication device to a multimedia machine known as Smartphone. The years of recession and consequent uncertainties have coincided with one of the most vigorous waves of innovation in telecommunications: the uptake of mobile broadband devices and services. These add new

market opportunities on top of the structural trend of digitalization of our society. The surge in new devices such as Smartphone and tablets, combined with an increasing number of multimedia applications, has led to exponential growth in data traffic volumes and increased spending on wireless and IP networks. The fourth generation wireless network is being adapted faster than expected.

**1.1.1Market Penetration**

The market penetration process refers to individuals that are non-buyers of a product or service and then when given some type of information-based decision they become buyers (Yang et al., 2007). Market penetration is a growth strategy that involves selling more of current products or services to your current target market. Although there is no radical change to the company's corporate strategy, it often provides a significant opportunity to increase both revenues and profit.

Many business owners naturally begin to consider tactical actions that are focused on immediate sales. Price discounting is an obvious example that may provide a spike in demand for your product or service. But customers attracted by low price are opportunistic, and rarely will repurchase at regular prices. Permanent market share is more likely obtained through increasing the perceived value you offer relative to competitors. According to Khan and Khan (2008) an alternative to increasing market share, a company can use a market penetration strategy by increasing product usage. Small changes to the business will often directly increase the volume or frequency with which customers use a company's products and services.

According to Taylor (2004) the evolution of the wireless industry will depend not only on engineering innovation but, more importantly, on understanding what the consumers want, what

will fit their particular lifestyles, and what will enhance their lives in the future. The mobile phone industry has become increasingly larger within the last three years as a result of more affordable cellular phones as well as lower service costs. Companies are competing in an advance technology and communication sector in which success attracts customers to buy their products and services. The market is very competitive because they offer the same products and services, but has different physical attributes to the phones and different costs, which buyers have choices to choose from.

Companies want to provide the best products and services to attract buyers by lowering cost and improving products, which makes the cell phone industry very competitive. The usage of mobile phones in the market is affected by macro and micro environment. The macro-environment involves factors outside of the direct control of the business. These factors, then, include the economy, government policies and social changes and thus, macro factors have the ability to fundamentally change the environment of an organization but the relationship is typically one way (Gillespie, 2007)

Market penetration was developed to permit businesses to know what percentage of all possible sales was represented by their actual sales (Makgosa and Muhube, 2007). In common practice, one measures market penetration by measuring all real sales of a given good for a given period and then comparing that total with the total of all sales of that specific good for the same period made by one's own company. According to Cronje *et al.*, (2004) is important to measure market penetration because one's sales of a given good may go up, implying success, but actually not have increased as much as the total sales have increased. In this case one's share of the market has fallen and one's penetration has actually weakened.

### **1.1.2 Mobile industry in Kenya**

The mobile phones have become an integral part of everyday life in many countries all over the world. Mobile phone is accepted as one of the most widely spread technologies of today. Since the first commercial mobile phone service was launched in 1978 in Japan, the total number of mobile phone subscribers in the world was estimated to have reached 5.2 billion by 2010 (ITU, 2011). Mobile phone penetration rates vary by country to country, with some countries having a penetration rate of less than fifty percent and with some countries having a penetration rate of more than 100 percent. According to statistics from Communications Commission of Kenya (CCK, 2010) there were more than 19 million mobile telephone users in Kenya by the end of 2009, as compared to under 15,000 in 1999.

Statistics show that mobile network coverage is predominantly urban with data from Communications Commission of Kenya (CCK, 2010) indicating that cellular networks have a national coverage of about 84.5% of the population and only about 34% of geographic area coverage. This may require government intervention in expansion of the cellular networks to underserved areas which are usually regarded as not commercially attractive by profit oriented mobile telephone service providers. Mobile telephones and related services have created new livelihoods through creation of professional and non-professional jobs. Statistics from the Kenya National Bureau of Statistics (KNBS) indicate that most Kenyans, about 67.7% (KNBS, 2010) live in rural and remote areas of the country while only 32.3% live in urban areas.

Data released by Communications Commission of Kenya (CCK, 2010) in March 2010 indicates that mobile telephone networks have a national coverage of about 84.5% of the Kenyan population and 34% geographic coverage. This 34% geographic coverage implies that large

portions of Kenyan land mass are not covered by mobile telephone networks especially in the arid and semi-arid areas. CCK also estimates Smartphone usage at about 4% of the population and an estimated population that had access to mobile phone services during the same period as 10.2%. But with high mobile phone networks penetration, Smartphone access could increase dramatically.

CCK sector statistics indicate a penetration rate of mobile service as 51 per 100 inhabitants which compares favorably with the developing world's penetration of 49.5 per 100 inhabitants (ITU, 2009). Unlike its fixed-line telecommunications market, Kenya boasts a vibrant and competitive mobile phone market that is growing quickly. Mobile phone penetration is defined as the number of mobile phone added per 100 inhabitants (otherwise known as mobile phone ownership). Furthermore, one of the reasons for the remarkable success of mobile in Kenya has been the stagnation of the fixed line-market. Mobile phones have proven a far more efficient technology in providing access to communications especially in the lower income population of Kenya (Cant and Machado, 2005:7). Profitability of the mobile network operators results from this growth in mobile phone penetration.

### **1.1.3 SmartPhone Handsets**

Mobile communication including mobile phone is a complex rapidly changing industry consisting of hardware, software, network and business aspects. The usage involves the mobile phone, the telecommunications system, the mobile phone user, the adoption and the use of the system. One of the best benefits of mobile phones is that this technological invention has made people accessible almost anytime and anywhere. The mobile phone has totally changed the world. In a short period, the mobile phone has learned to do lots of things, such as to take

pictures, to listen to music, to have Internet access and you can even break with somebody with the help of a SMS.

In order to consider mobile phone usage variety, it also would be considered in mobile phone usage. Mobile phone usage involves the telecommunications system, the mobile phone users, the adoption and use of the system (Pedersen 1993). Advance in technology and market competition drive is an additional of new service and capabilities. Human cognition and attention have limited and many users are difficult to cope with the information overload and the demand of mobile phone technology (Zieflt and Ray, 2005).

The term SmartPhone refers to a programmable mobile phone that offers advanced capabilities and features that help individuals in their daily work and personal life (Euromonitor, 2010). It contains functions such as instant messaging, downloading applications, utilizing information services such as WiFi and Global Positioning System (GPS) and entertainment. With the popularity and functions offered in the phone, Smartphone have seen an increase in terms of demand.

Ni *et al.*, (2009) found that in the third quarter of 2008, Canalys reported that global shipments of Smartphone had hit a new peak of just under 40 million units despite the gloomy economic picture and Smartphone represented around 13 percent of the total mobile phone market. In meeting these demands, several companies such as Apple, Microsoft, Nokia and Google have developed various Smartphone Operating Systems (OS) such as Symbian OS, iPhone OS, Windows Mobile and Android, respectively for the convenience of their users by providing different supports, features and applications (Sharma, 2008). As Smartphone decrease in price,



they are increasing rapidly in both power and functionality and their popularity has risen exponentially in the past five years (Roche and O'Neill, 2010).

The recent advances regarding cellular phone technology have enabled mobile devices to perform functions previously not possible with handheld devices. These advanced functions have been captured by a new mobile device known as a Smartphone. This powerful device is intended to satisfy users by providing operating systems similar to computers in a customer's hand (Ma and Liu, 2005). Smartphones possess operating systems such as Symbian, Windows Mobile, and Android. These operating systems allow Smartphone users to read and edit Microsoft Word, Excel, and PowerPoint files.

Additionally, Smartphone have enabled users to conveniently access the Internet through wireless connections thereby providing greater data transfer capability. Smartphones also provide high resolution digital cameras, voice and video recording features. These capabilities enable a Smartphone to serve as both a mobile computing and communication device and thus become a powerful tool to support healthcare decision-making processes.

Along with the Smartphone fundamental capabilities to make voice call, video call, SMS, and MMS, Smartphone have been repositioned as a "new information medium" (May and Hearn, 2005). In other words, Smartphone have extended list of information processing functionalities such as managing personal time schedule, accessing Internet contents, editing documents, utilizing location-awareness function, and many other exciting applications. All these functionalities are delivered through the software installed on the Smartphone.

It is stressing that the ever increasing importance of mobile software and other mobile contents are solicited by the prevalent of Smartphone. Litchfield (2010) examined the top five most accepted definitions of smart phone, and concluded that there was no single, accepted definition. Due to the constantly evolving nature of mobile phone technology, the line between “smart” and “dumb” phones is unclear. Actually, even “dumb” phones can have some “smart” phones’ features, such as a touch screen and a proper operating system. At the conclusion of his research, Litchfield offered the definition of smart phone in 2010 as a phone that “runs an open operating system and is permanently connected to the Internet” (Litchfield, 2010).

## **1.2 Research Problem**

The unprecedented penetration and use of Smartphone has allowed the users to access variety of services which was only available on computers. Krieger *et al.*, (2009) stated how Smartphone have changed from being an object of “conspicuous consumption” and intense epidemic curiosity to becoming a mundane, ordinary artifact. The association that links human and Smartphone together has been described as an increasingly indissoluble unit. This Smartphone trend is so big because it helps feed consumer addictions to other Smartphone trends that have emerged since 2007 (Goldman, 2010). For example, Smartphone users are clearly tantalized by both useful and fun functions of more than 100,000 applications that are available in iPhone, Android and other Smartphone (Goldman, 2010).

The rise of the Smartphone usage in Kenya has been astronomical over the past year or so. The main reason for this has been the arrival of affordable Smartphone in many flavors from Nokia, Samsung, Huawei, RIM (AKA BlackBerry) and even other lesser known brands such as Mi-Fone and Tecno. As things stand in Kenya, it is estimate that Smartphone penetration should be

in the region of 7% which is still quite low when many other global markets have over 30% penetration. On many levels, one could say that it is still early days for Kenya where Smartphone are concerned but this will change radically over the next few years. The reality is that for pretty much the first time in Kenya, there are Smartphone retailing for as little as Ksh. 7,000.00 depending on the brand and model.

At the same time, most of these low-cost Smartphone run on Google's Android, a trend that was started by Huawei's ground-breaking IDEOS almost 2 years ago when it retailed for around Ksh 8,000.00 at launch. However currently there are as many as 10 Android smartphone models retailing for under Ksh. 10,000.00 in Kenya – including Dual-SIM models. It therefore goes without saying that when it comes to entry-level Smartphone, Google's Android has all the potential to wipe out Nokia and BlackBerry in Kenya.

Recent studies done the on factors that contribute to the penetration and use of Smartphone include: Masika (2005) did retail marketing strategies adopted by commercial banks in Kenya and found out that commercial banks in Kenya pursue several strategies as part of the wider retail banking marketing strategies. The most pursued strategies are marketing segmentation, product strategies, distribution, pricing, marketing relationship and promotions. Nguthuku (2008) researched on an analysis of factors contributing to increased marketing activities by Kenya commercial bank limited and established that companies constantly transform and must adapt to new frameworks as competition in the banking industry has increased as a result of both local and foreign banks and banks need to respond to this competition to retain market share.

A study by Makori (2006) on challenges faced by African airlines in selecting and entering international markets established that changing macro-environmental factors indeed pose various challenges to these airlines. The political-legal environment, economic, demographic, technological and socio-cultural environments were each a force to reckon with in their own respective ways. The continuous acquisition of Smartphone by mobile users at the expense of other phones necessitates an understanding of factors that contributes to the penetration and use of Smartphone. This study therefore aimed at answering the question; what factors contributes to the penetration and use of Smartphone in Kenya?

### **1.3 Research Objective**

To establish the factors that contributes to the penetration and use of SmartPhones in Westlands, Nairobi.

### **1.4 Value of the study**

The local distributors of mobile phones will obtain valuable information on the factors that contribute to the penetration and use of smart phones thus they can pursue in order to have competitive edge over their competitors. This study will be of academic value to those interested in mobile phone studies with an aim of establishing a business in the telecommunication industry since they will be able to understand what to do right to succeed and what if done wrong will bring the business down.

From the academic viewpoint, the overview of the Smartphone market in Kenya provides them a foundation where they further design their research. On the other hands, practitioners such as mobile phone manufacturers, application developers, and relevant stakeholders in the industry



would greatly appreciate the information as they can be used to strategize their marketing strategies, and plan for the future directions.

This study will benefit the government especially the Ministry of information for making policy decisions whose overall objectives are to accelerate the rate of growth in the telecommunication industry and take advantage of the growing world markets. This study is expected to increase body of knowledge to the scholars on market penetration strategies used by mobile phone companies and especially make them in touch with the internal and external factors influencing marketing by the mobile phone companies.

## CHAPTER TWO: LITERATURE REVIEW

### 2.1 Introduction

This chapter provides information from publications on topics related to the research problem. It examines what various scholars and authors have said about the factors contributing to the penetration and use of products. The chapter is divided into three main areas: theories of consumer behaviour, market penetration and usage, factor contributing to the penetration and use SmartPhones.

### 2.1 Theoretical framework

This study fits into the theoretical framework of Consumer Behaviour, Technology Acceptance Model and Diffusion of Innovation. Smart Phones Will Account for 53 Percent of Global Handset Sell-through in 2015 (Dan, 2011). Smartphones are defined as a merging device that includes cellular telephone, programmable information management features and the internet access. A number of theories have been advanced to explain the penetration of SmartPhones in the market and the theories are explained below.

#### 2.1.1 The theory of consumer behaviour:

The change in consumers' products and services preferences and their different ways of buying produce the study of consumer behaviour. The study of consumer behaviour aims at having knowledge on how consumers will behave in the future, especially as a result of experience and knowledge influencing their buying decisions (Lamb *et al.*, 2008). There are three components in the model of consumer behaviour, namely, individual factors, social factors and the purchase situation. These components influence the consumers' decision to buy or not to buy a product or service. Individual factors influencing consumer buying decision: These are factors such as

perception, motivation, learning, values, beliefs, attitudes, personality, self-concept and lifestyle. They are the first major group of factors that influence consumer decisions to buy or not to buy. They have a powerful effect on consumers through advertisement and post purchase behaviour (Lamb *et al.*, 2008).

Social factors influencing consumer buying decision: According to Lamb *et al.*, (2008) these are external environmental factors existing from interactions between the consumer and the social system. They are the second most important group of factors influencing decision making including all effects on buying behaviour. These social factors affecting consumers' decision to buy or not to buy are social class, reference groups, opinion leaders, culture, subcultures and family life cycle. Purchase situation influencing consumer buying decisions: At the time of purchase individual consumer behaviour is influenced by the existing purchase conditions. The three conditions that play a major role in buying are: the reason for buying, the time of buying and the physical surroundings affecting buying (Lamb *et al.*, 2008).

### **2.1.2 Technology Acceptance Model**

Technology Acceptance Model (TAM) and Diffusion of Innovation (DOI) theories have proven to be a useful theoretical framework for understanding user acceptance and behaviour related to information technologies. Davis (1989) developed the TAM and investigated the determinants of user acceptance that can explain a user's behaviour in regard to the user's general attitude toward the selection of an information system. According to the TAM, users evaluate the system based on the perceived ease of use and perceived usefulness of the system. If/the system is perceived as being easy to use and useful; a user would have a positive attitude toward the system, which in

turn leads to the user's intention to use the system. Then, the intention results in the user's actual decision to select a particular information technology which in this case is the smartphone.

Kim (2005) extended TAM to show how perceived ease of use and usefulness influence users' attitude towards smartphone adoption in a job setting by adding the following factors: perceived cost savings, job relevance, company's willingness to fund, and experience. These factors were applied in an online survey and were tested against the proposed model using Structured Equation Modelling (SEM). The results from 286 sets of data supported the new model, and raised the percentage of the variance of the model to 62.7% from approximately 50% from the Davis' TAM model although there was an increase in the variance of two of the added factors that accounted for about 5%. The model was able to better predict results than its predecessor. Accordingly, it is clear that although Kim's expansion of the Davis' TAM model is more sophisticated, and represents a better model, the Kim's expanded TAM model still has not identified all factors to be considered.

### **2.1.3 Diffusion of Innovation**

Park and Chen (2000) confirmed that behavioral intention to use a smartphone was largely influenced by perceived usefulness and attitude toward using a smartphone. They further postulated that perceived usefulness and perceived ease of use positively determine attitudes toward using a smart phone. This is consistent with the Davis' (1989) TAM model. According to Rogers (2003), Diffusion of innovation Theory is concerned with the manner in which a new technological idea, artifact or technique, or a new use of an old one, migrates from creation to use. The smartphone was first introduced to the market in the year 2000. Thus, they view smartphone devices as recent innovations and employ the Rogers' (2003) DOI theory to evaluate



whether an individual or an organization will select a smartphone based on their knowledge on its functionality and usability. This is consistent with the Davis' (2000) TAM model when we substitute usefulness for functionality and ease of use for usability.

## **2.2 Market penetration and usage of Smartphone**

The Global System for Mobile Communications (GSM) has been recognized as the first communication technology and it has dominated the market in the developed world. In Sinisalo and Karjaluo (2009), mobile technology is reported to have advanced to where mobile phones are cheap enough and powerful enough to use. A well planned mobile technology development giving the subscribers access to the internet via their mobile phone supports modern education and lifestyles through multimedia services and e-mail. Other services such as novel location based services and mobile TV and a wide-spread use of 3G and General Packet Radio Service (GPRS) dominate the mobile devices world (Sinisalo and Karjaluo, 2009).

Smart Phones Will Account for 53 Percent of Global Handset Sell-through in 2015 (Dan, 2011). Smartphones are defined as a merging device that includes cellular telephone, programmable information management features and the internet access. They have reduced the product's cost, and size, and you do not have to carry more or heavy devices for instant communication. Smartphones offer a number of technologies, including GPS tracking, a digital camera with more advanced mega pixel, and digital music. Smart phones can run a variety of 'desktop' applications and are typically capable of connecting to the World Wide Web and other Internet based services. As the smart phone has effectively become 'the Internet in your pocket'(George, Tim & William, 2011).

### **2.3 Factors contributing to the penetration and use of Smartphone**

Due to time scarcity, consumers have a high need for convenience where they are able to use their Smartphone at any time and any place (Genove, 2010). Holub *et al.*, (2010) claimed that in the current mobile revolution, the Smartphone is now portable, tied to an individual and is not a fixed workstation. Unlike transactions on desktop and laptops at home or in the workplace, consumers can perform Smartphone transactions in circumstances that have severe time constraints, such as waiting for someone or waiting for a traffic jam to clear. Thus, consumers has become highly dependent on Smartphone to retrieve useful information by a simple browse and click to access their Smartphone as it is with them when they commute, relax at home, travel overseas and so on (Genove, 2010).

Holub *et al.*, (2010) asserted that the normal mobile phone and laptops have become widely diffused into Smartphone for consumers' convenience. The dual-use nature and function of a normal mobile phone and laptop has provided a positive increase of the usage rate of Smartphone users. Consumers are able to check their e-mails, communicate on social networking web sites, and use online chat on their Smartphone instead of paying for broadband internet on computers. It is clear that as the Smartphone provides convenience to others, dependency on Smartphone will be on the rise.

#### **2.3.1 Social-Cultural Factors**

Social needs are the needs for social interaction of an individual that represent the need for communicating with friends, family and affiliation such as group membership, clubs, churches and work affiliations. Social need is one of the determinants of consumers' dependency on Smartphone because the Smartphone have become much more versatile, allowing consumers increased usage for communication and maintaining relationships between and among

individuals (Lippincott, 2010). In Wei and Lo's (2006) research, it was found that consumers were highly engaged with Smartphone when there was a positive correlation between social needs and dependency. Consumers with a high need to socialize and be connected were found to increase their usage rate on Smartphone because claimed that interaction or social networking has been embedded and conveyed through the Smartphone itself. Consequently, consumers with a lower level of social needs are expected to have a lower usage rate of Smartphone (Morgan, 2010).

The stimulus of keeping contact with consumers' existing groups of friends and learning more about individuals they meet offline encourages a higher engagement of consumers with Smartphone with easy access to embedded social networks such as Twitter, Facebook and MySpace (Lippincott, 2010). Smartphones allow consumers to satisfy their need to belong as they are able to stay connected with others either through social networking sites or using live chat integrated in the Smartphone. It can be seen then that Smartphone are an important facilitator of one's social relationship. According to Wei and Lo's (2006) consumers fulfill their social need by engaging with Smartphone and have concerns about being socially disconnected, uninformed and excluded from friends and their social activities.

Social influence is defined as the way other people affect one's beliefs, feelings and behaviour (Mason *et al.*, 2007). Individuals are not often conscious of social influences as they are so pervasive. Consumers may be susceptible to social influence by observations, perceptions or anticipations of decisions made by others in engaging to Smartphone. Social influence is often seen as a strong influencer that affects the consumers' dependency on Smartphone (Auter, 2007).

Mason *et al.*, (2007) found that social influences have positive impact on the dependency of using Smartphone.

Friends and family members are seen as social influencers who are perceived to be important to consumers in encouraging a greater dependency on Smartphone. Like other innovative products, the Smartphone is an “experience good”; consumers must be experienced to value and are more ambiguous about their potential uses. If Smartphone make a good impression on others, consumers' dependency on them will increase and consequently will lead to positive word-of-mouth communication to others. Nevertheless, consumers who are more likely to incorporate and rely on positive word-of-mouth opinions of important others on Smartphone will in turn increase their usage rate by either transforming them into beliefs, or through a process of imitation (Basaglia *et al.*, 2009).

Social influences are related to a person's attitude towards e-government services and are based on the concept of personal innovativeness. Personal innovativeness in using IT is a trait reflecting a willingness to try out any new technology (Agarwal and Prasad, 1998). Innovations create uncertainty about their expected consequences, and individuals who are uncomfortable with uncertainty will tend to interact with their social network before making a decision. Overall, using an innovation is seen as a form of public consumption; it can be significantly influenced by friends and colleagues (Hong and Tam, 2006).

Hsu and Lu (2004) studied the impact of social norms and found that this construct explains a determining factor in user's decision to accept a new technology. People's attitudes, behaviour, and perceptions are affected by the information he or she receives from the social environment. Social influences may shape his or her confidence in or ability to use a technological system.

Potential users of e-Government services may feel that adopting the services and technologies will not require much effort if others in their social environment say that the system is easy to use. Social influence encourages people to use a technology, though it has an indirect impact on their intention to adopt.

External influences such as the mass media and expert opinion are also expected to impact people's perceptions of a technology particularly in the initial stages of the diffusion of a technology (when there are few adopters) as these channels are an effective means of creating knowledge-awareness among potential adopters (Rogers, 1995). Prior research supports these suggestions. Agarwal and Prasad (1998) in a survey of potential adopters found that mass media channels were more important than interpersonal channels for creating knowledge-awareness of the technology. Pederson (2005) also found that for early adopters of mobile Internet services external influences had a significant impact on perceived usefulness.

### **2.3.2 Psychological Factors**

Information processing speed of the Smartphone is fast since it has high-performance hardware specifications. And, the Smartphone can connect to Wi-Fi network as well as the carrier's network. The users can access the information they want more easily and rapidly since Smartphone have larger screen sizes than feature phones and provide high resolution and graphics processing power in general. Attitudes refer to an individual's inclination to display certain responses toward concepts or objects (Vijayarathy, 2004). Vijayarathy (2004) generally viewed attitudes toward objects as outcomes of an individual's beliefs about an object and evaluative responses associated with these beliefs. In the context of TAM, positive attitudes

toward new technologies have been validated as antecedents of strong intentions to adopt such technologies (Shih, 2004).

Consumers are perceived to be dependent on their Smartphone when they viewed them as a necessity and have a strong propensity for continuous high usage, being engaged and unwilling to part from it. Having used or been highly engaged with Smartphone means that the consumer not only has personal knowledge about their attributes but also has the personal experience about how they work for consumers and how they satisfy their needs (Tian *et al.*, 2009). As a result, consumers' expectations for future purchase behaviour will be affected by their past experience as they are heavily dependent on Smartphone because of the underlying motives.

This is supported by the Mafe and Blas (2006) study which found that consumers' high dependency on Smartphone is positively correlated with consumers' future purchase behaviour. Moreover, consumers who have prior experience with a Smartphone learn quickly from their experience. Whether the experience of depending on Smartphone is positive or negative, experienced consumers will quickly adjust their subsequent evaluations in purchasing their next Smartphone (Kim, 2008).

### **2.3.3 Relative usage**

The relative advantage is the degree to which the adopter perceives the innovation to represent an improvement in either efficiency or effectiveness in comparison to existing methods. There are many reasons people accept or reject a new product in the market. From the past research, two stressors had been suggested to be more prevalent among the many factors that influenced the intention to IT adoption. One of them is relative advantage. Relative advantage is where people believe that with the adoption of the latest IT product, it will enhance their job

performance. Empirical research indicates that perceived relative advantage and the related concept of perceived usefulness significantly impact attitudes towards among others a computer banking system and e-procurement (Murali, Wemyss and Raduan, 2010)

#### 2.3.4 Ease of Use

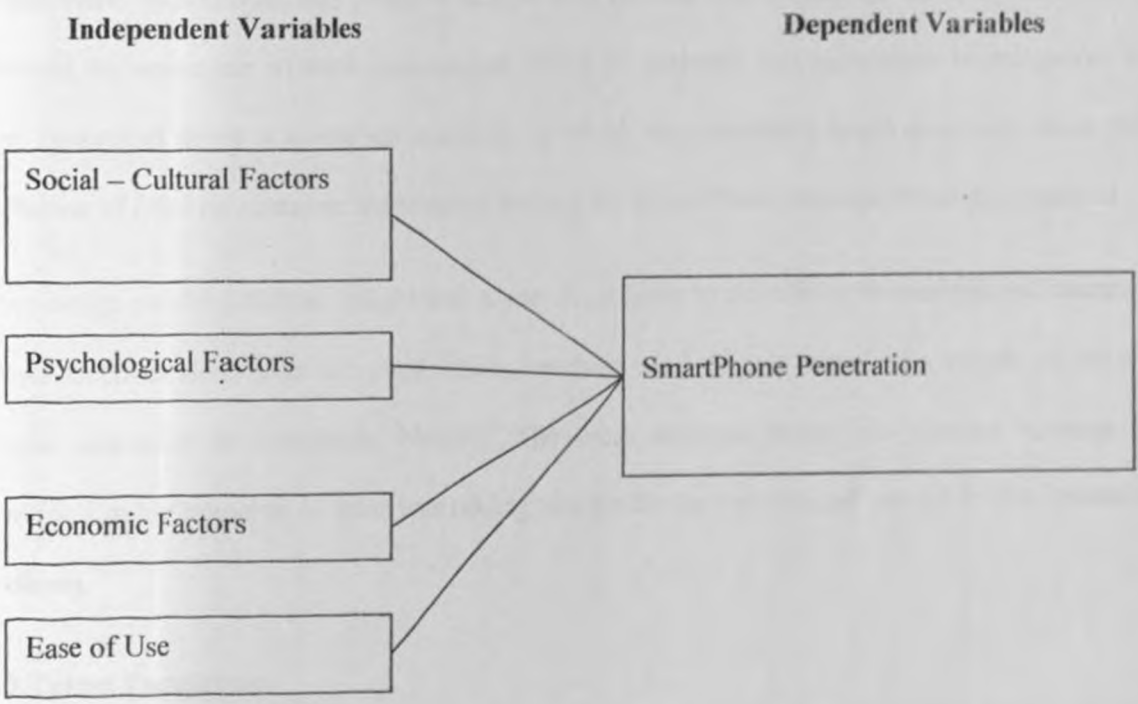
Smartphone is easy to control by anyone from a child to elderly since most smartphones adopt multi-touch and intuitive user interface functions. Ease of use refers to an individual's assessment of the amount of effort needed to perform a task using a new technology (Lu *et al.*, 2008). Although Davis (1989) put more emphasis on the relationship between perceived usefulness and attitudes than between perceived ease of use and attitudes (Huh *et al.*, 2009), he posited that users would not adopt a new technology unless it is easy to use.

Even though a product is useful, it also needs to be easy to operate. A product that is difficult to use will result in more frustrations and complaints. This happens when the efforts needed outweigh the gain from using it. The efforts consist of the resources that a person needs to invest in order to achieve a specific task. In this case, using the Smartphone would be hassle free in getting their job done. When this happens, the product will be more likely to be accepted. Ease of use is defined as the degree to which a user believes that using Smartphone would be free of effort. Perceived complexity and its conceptual opposite direction, perceived ease of use have been extensively studied by Information Technology researchers. Several studies find significant relationships between perceived ease of use (or complexity) and use intentions (Murali, Wemyss and Raduan, 2010).

#### 4 Conceptual Framework

The management of any mobile phone company will wish to determine the factors that affect the penetration of the handsets to its potential customers. By understanding this factors that affect the penetration of the handsets, then the companies will come up with appropriate strategies to shore up the their sale and counter any competitors strategies. A number of factors have been considered in the literature review and the major ones identified include social and cultural factors, psychological, economic and ease of use factors. These factors if addressed by an entity, by coming up with a product that meets the factors, will impact on their level of sales.

Fig. 2.1 Schematic diagram showing variable relationships



Source: Researcher 2012



## CHAPTER THREE: RESEARCH METHODOLOGY

### 3.1 Introduction

The chapter described the research method that was used. This included the research design, the target population, sampling design, data collection instruments and the techniques for data analysis.

### 3.2 Research Design

The research design for the study was a descriptive cross sectional research study. The reason for using this design of study was because descriptive research determines and reports the way things were. In addition, this research design was deemed appropriate for the study because it allowed the researcher to draw conclusions about the variables that were under investigation. It was concerned about a univariate question in which the researcher asked questions about the influence of price on customer satisfaction among the Smart Phone users in Westlands, Nairobi.

This design provided further insight into research problem by describing the variables of interest. Cross sectional study was also used which involved conducting a survey of a sample of Smart Phone customers in Westlands, Nairobi. The cross sectional study was adopted because it provide a quick snapshot of what was taking place with the variables of interest for the research problem.

### 3.3 Target Population

The population of the study consisted of 300 customers of the four major Mobile phone service providers namely Safaricom, Airtel, Telkom Orange and Yu. The selection of the Westlands shopping centre as the area of the research coverage was due to the diversity of customers and

the level of concentration of the inhabitants and hence the researcher believed the location provided a more representative result of the study.

### 3.4 Sampling Design

To determine the sample size, a 95% confidence level is used which results in a risk estimate of 5%. At 95%, our response distribution is 50%. The formula to calculate the sample size is:

$$n = X^2 NP (1 - P) / d^2 (N - 1) + X^2 P (1 - P) \text{ (Krejcie and Morgan, 2000)}$$

Where;

$X^2$  = the table value for 1 degree of freedom at the desired confidence level

N = the population size

P = the population proportion (assumed to be 0.50 since this provides the maximum sample Size) = 247,102 as per the 2009 census survey

$d$  = the degree of accuracy expressed as a proportion of 0.05 (Krejcie and Morgan, 1970).

$$n = X^2 NP (1 - P) / d^2 (N - 1) + X^2 P (1 - P)$$

$$= 3.841 * 247,102 (1 - 0.5) / 0.05^2 (247,102 - 1) + 3.841 * 0.5 (1 - 0.5)$$

$$= 3.841 * 123,551 (0.5) / 668.16 + 0.96025$$

$$= 3.841 * 61775.5 / 669.12$$

$$n = 355$$

The representative sample of the study was 280 respondents who were users of Smartphones.

Upon getting the sample size, the researcher used purposive sampling whereby the researcher sampled those users with smart phones within the locality. Respondents were selected at random based on the mobile phone network of choice. This approach was considered appropriate since it ensured a representative sample of the population. In addition, considering the time and

budgetary constraints it was considered an appropriate sampling strategy that yielded representative results.

### **3.5 Data Collection**

The study used primary data which was collected through self-administered questionnaires. The structured questionnaires were used to collect data on the role of distribution strategy as a source of competitive advantage. The questionnaire consisted of both open and closed ended questions designed to elicit specific responses for qualitative and quantitative analysis respectively. The questionnaires were administered through “drop and pick later” method.

### **3.6 Data Analysis**

The data collected was analyzed using descriptive statistics (measures of central tendency and measures of variations). This method of analysis was most desirable as it enabled the researcher to have an insight of the factors that contribute to the penetration and use of smart phones in Kenya. Once the data was collected, the questionnaires were edited for accuracy, consistency and completeness.

However, before final analysis was performed, data was cleaned to eliminate discrepancies and thereafter, classified on the basis of similarity and then tabulated. The responses were then coded into numerical form to facilitate statistical analysis. Data was analyzed using SPSS based on the questionnaires. After descriptive analysis of data collected, tables, pie charts, percentages, mean and standard deviations were used to present the information.

## CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSIONS

### 4.1: Introduction

This chapter presents the analysis of the data collected from the respondent and discusses the research findings on the factors contributing to the penetration and use of Smartphones in Kenya.

All completed questionnaires were edited for accuracy, uniformity, consistency and completeness. The response rate of 93% (280) respondents was achieved from the total target of 300 respondents who used and owned Smartphones in Kenya. This good response has been attributed to the fact that quite a good number of the respondents were knowledgeable to fill the questionnaires. Summaries of data findings together with their possible interpretations have been presented by use of mean, percentages, frequencies, variances, and tables.

### 4.2: Gender of the Respondents

Respondents were asked to indicate their Gender and indicated as shown in Table 4.1:

**Table 4 1: Gender of the Respondents**

Gender	Frequency	Percentage (%)
Male	150	57
Female	130	43
<b>Total</b>	<b>280</b>	<b>100.0</b>

**Source: Research data**

As shown in Table 4.1, 57% of the respondents were Male and 43% were female. Both of the respondents were self employed Business operators.

### 4.3: Age of the Respondents

Respondents were asked to indicate their age and indicated as shown in Table 4.2:

**Table 4 2: Age of the Respondents**

Age	Frequency	Percentage (%)
21-30	97	35
31-40	103	37
41-50	50	18
50 and above	30	10
<b>Total</b>	<b>280</b>	<b>100.0</b>

Source: Research data.

As shown in Table 4.2, 37% of the respondents were aged between 31-40 years. 35% of the respondents were aged between 21-30 years. 18% of the respondents were aged between 41-50 years and 10% of them were above 50 years.

### 4.4: Education level of Respondents

Respondents were asked to indicate their education level and indicated as shown in Table 4.3:

**Table 4.3: Education level of Respondents**

Education level	Frequency	Percentage (%)
Secondary	0	0
Tertiary College	10	4
Undergraduate	170	61
Post graduate level	100	36
<b>Total</b>	<b>280</b>	<b>100.0</b>

Source: Research data.

As shown in Table 4.3, 61 of the respondents were degree holders. 36% were postgraduate respondents with Masters Degrees. While 4% were certificate and diploma holders. All of the respondents had adequate knowledge concerning Smartphones in the market.

#### 4.5: Occupational Status of Respondents

Respondents were asked to indicate their occupational status and indicated as shown in Table 4.4:

**Table 4.4: Occupational Status**

Occupational Status	Frequency	Percentage (%)
Student	0	0
Employed	200	71
Unemployed	10	4
Self employed / business person	70	25
<b>Total</b>	<b>280</b>	<b>100</b>

**Source: Research data**

As shown in Table 4.4, 71% of the respondents were employed. 25% were Self employed / business people while 4% were unemployed.

#### 4.6: Mobile Telephone Service Provider

Respondents were asked to indicate the preferred Mobile service provider and indicated as shown in Table 4.5:

**Table 4.5: Mobile Telephone Service Provider**

Mobile Telephone Service Provider	Frequency	Percentage (%)
Safaricom.	200	71
Zain/airtel	50	18
Orange/ TelKom	16	6
YU	15	5
<b>Total</b>	<b>280</b>	<b>100.0</b>

**Source: Research data**

As shown in Table 4.5, 71% of the respondents were Safaricom subscribers. 18% were Airtel subscribers. 6% were Orange subscribers while 5% were Yu subscribers.

#### **4.7: Number of Sim cards used by subscribers**

Respondents were asked to indicate the number of Sim cards they possessed and indicated as shown in Table 4.6:

**Table 4.6: Number of Sim cards used by subscribers**

Number of Sim cards	Frequency	Percentage (%)
One	10	4
Two	80	29
Three	80	29
Four	60	21
More than four	60	21
<b>Total</b>	<b>280</b>	<b>100.0</b>

**Source: Research data**

29% of the respondents had two and three Sim cards. 21% had more than four Sim card while 4% had one Sim card.

#### 4.8: Owning a Smartphone

Respondents were asked to indicate whether they own or used a Smartphone and indicated as shown in Table 4.7:

**Table 4.7: Owning a smart phone**

	Frequency	Percentage (%)
Yes	280	100.0
No	0	0
<b>Total</b>	<b>280</b>	<b>100</b>

**Source: Research data**

All the respondents interviewed had owned and used Smartphone.

#### 4.9: Means of acquiring the smart phone

Respondents were asked to indicate the mean they used to acquire a Smartphone (s) and indicated as shown in Table 4.8:

**Table 4.8: Means of acquiring the smart phone**

Mean of acquiring	Frequency	Percentage (%)
Purchase (self)	120	44
Gift	80	28
Provided by employer	80	28
Lottery / promotions / competitions	0	0
<b>Total</b>	<b>280</b>	<b>100</b>

**Source: Research data.**



As shown in Table 4.8, 44% of the respondents indicated that they had personally purchased a Smartphone while 28% of the respondents were gifted and provided by their employers. None of the respondents acquired a Smartphone from lotteries/promotional activities.

#### 4.10: Duration of owning the smart phone

Respondents were asked to indicate the duration they had owned and used a Smartphone (s) and indicated as shown in Table 4.9:

**Table 4.9: Duration of owning the smart phone**

Duration	Frequency	Percentage (%)
Less than two years	120	43
2-5 years	100	36
6-10 years	60	21
Over 10 years	0	0
<b>Total</b>	<b>280</b>	<b>100.0</b>

**Source: Research data.**

43% of the respondents indicated that they had owned a Smartphone for less than two years. 36% of them indicated that they had owned a Smartphone for a period of 2-5 years while 21% had owned a Smartphone for a period of 6-10 years. None of them had owned a Smartphone for a period of over 10 years.

#### 4.11: Factors that influence the purchase of a Smartphone

Respondents were asked to indicate the factors that influenced the purchase of a Smartphone and indicated as shown in Table 4.10:

**Table 4.10: Factors that influence the purchase of a Smartphone**

	N	Very great extent	Great extent	Moderate extent	Small extent	Not at all	Mean
Factors influence the purchase of a Smartphone		[5]	[4]	[3]	[2]	[1]	
Newest technology (e.g., new functions, new applications)	280	51.2	2.4	17.1	26.8	2.4	3.88
Design and appearance	280	41.5	29.3	29.3	0.00	0.00	3.85
Productivity tool of choice (can do everything on these devices)	280	39.0	2.4	22.0	2.4	34.1	3.75
Attractive promotional offers from mobile phone operations	280	0.00	39.0	2.4	34.1	24.4	3.64
Word of mouth (friends, peers, affiliations and family use Smart Phones)	280	48.8	0.00	0.00	34.1	17.1	3.34
Technology investment is focused on smart phones	280	4.9	43.9	22.0	4.9	24.4	3.30
They're getting cheaper	280	0.00	0.00	4.9	26.8	68.0	2.20
<b>Total</b>	280						

Source: Research data.

As shown in table 4.10, most of the respondents indicated that new technology was the major factor that contributed to the purchase of a Smartphone with a mean of (3.88). This was due to the emerging technological trends in the mobile phone industry.

Respondents indicated that design and appearance of a Smartphone was another factor that contributed to the purchase of the Smartphone with a mean of (3.85). Most of the respondents indicated that Smartphone improved their productivity due to the ability of the Smartphone to perform various applications at the same time with a mean of (3.75).

Some of the respondents indicated that promotional campaigns from mobile phone manufacturers increased their demand of buying the Smartphone with a mean of (3.64). This was due to stiff competition from mobile brands. Most of the respondents indicated that word of mouth from their friends, peers and family members concerning Smartphone influenced their buying behaviour with a mean of (3.34).

Most of the respondents indicated that technology investment in the mobile phone industry by manufacturers had resulted to increased demand to purchase the Smartphone with a mean of (3.30). This was due to rapid technological changes that were making Smartphone to be more advanced compared to ordinary mobile phones that were losing value in the market with a mean of (3.30).

Some of the respondents indicated that the prices of Smartphone in the market were relatively expensive but some were purchasing Smartphone due to their capability regardless of the price with a mean of (2.20).

#### **4.12: Smartphone Specifications that influence the purchase**

Respondents were asked to indicate the specification that influenced the purchase of a Smartphone and indicated as shown in Table 4.11:

**Table 4.11: Specifications of the Smartphone that influenced the purchase**

Smartphone specifications that influence the purchase	N	Strongly agree	Agree	Moderate,	Disagree	Strongly Disagree	Mean
		[5]	[4]	[3]	[2]	[1]	
Aesthetics / Design (touch screen, QWERTY keyboard, etc)	280	51.2	2.4	17.1	26.8	2.4	3.68
Internet access / (Built-in Wi-Fi Adapter)	280	41.5	29.3	29.3	0.00	0.00	3.63
Price	280	2.4	2.4	22.0	34.1	39.0	3.61
Screen Size	280	0.00	2.4	39.0	34.1	24.4	3.51
Media /Entertainment (Music Player and Formats)	280	0.00	0.00	48.8	34.1	17.1	3.34
User friendly (Simplicity)	280	43.9	4.9	22.0	4.9	24.4	3.30
Brand	280	34.1	34.1	4.9	26.8	0.00	2.20
Battery Life	280	51.2	2.4	29.3	14.6	2.4	2.00
Business Supports	280	46.3	2.4	34.1	14.6	2.4	1.98
Memory Capacity	280	56.1	0.00	39.0	0.00	4.9	1.11
<b>Total</b>	<b>280</b>						

**Source:** Research data.

As shown in table 4.11, most of the respondents were influenced to purchase the smart phone due to improved features which included aesthetics, design, touch screen, and qwerty keyboard with a mean of (3.68). Internet access and built-in Wi-Fi adapter was a feature that influenced respondents to purchase a Smartphone with a mean of (3.63). Some of the respondents indicated that the price of the Smartphone influenced them to purchase a Smartphone due to the quality aspect associated with the price with a mean of (3.61).

Screen size was another feature indicated by respondents that determined the purchase of the Smartphone with a mean of (3.51). Media and entertainment were features that influenced respondents to purchase the Smartphone with a mean of (3.34). Most of the respondents indicated that user friendly aspect of the Smartphone influenced them to purchase it with a mean of (3.30). Respondents indicated that the brand of the Smartphone influenced them to purchase the Smartphone with a mean of (2.20).

Also some of the respondents indicated that battery life contributed to the purchase of the Smartphone with a mean of (2.00). Business support feature of the Smartphone was a specification that contributed to the purchase of the Smartphone with a mean of (1.98). The reason was that, the Smartphone supported business applications like selling and buying through the internet. The ability of the Smartphone to store a large amount of information was a feature that resulted to the purchase of the Smartphone with a mean of (1.11).

### 4.13: Applications that influence the usage of Smartphones

Respondents were asked to indicate the factors that influence the usage of Smartphones and indicated as shown in Table 4.12:

**Table 4.12: Applications that influence the usage of Smartphones**

	N	Very great extent	Great extent	Moderate extent	Small extent	Not at all	Mean
Factors that influence usage of the Smartphones		[5]	[4]	[3]	[2]	[1]	
Instant messaging (push mail / e-mail alerts)	280	51.2	2.4	29.3	2.4	14.6	3.88
Downloadable Application	280	46.3	2.4	34.1	14.6	2.4	3.76
Access to social network sites (blogs, facebook, Tweeter,etc)	280	56.1	0.00	39.0	0.00	4.9	3.71
Teleconference	280	61.0	0.00	2.4	36.6	0.00	3.68
Different options to internet access (wi-fi, LAN)	280	61.0	0.00	2.4	36.6	0.00	3.63
Supports multiple E-mail accounts	280	61.0	0.00	2.4	36.6	0.00	3.61
Video (skype, conferencing)	280	0.00	0.00	2.4	61.0	36.6	3.51
Playing games	280	39.0	24.4	0.00	34.1	2.4	3.34
Receive and review documents (edit Microsoft Word, Excel and PowerPoint files)	280	48.8	0.00	0.00	34.1	17.1	3.30
Take pictures (High resolution camera)	280	43.9	4.9	22.0	4.9	24.4	3.20
Managing personal time and schedules (smartphone handsets can function as personal organisers, with electronic diaries, contact lists, and automatic	280	34.1	34.1	4.9	26.8	0.00	3.18

reminders)							
Manage work life ( enable effective communication with work teams through corporate e-mails, access to company computer network, etc)	280	51.2	2.4	29.3	2.4	14.6	3.16
Security features	280	46.3	2.4	34.1	14.6	2.4	3.12
Information sharing (data can be received and transmitted via a smartphone, such as large e-mail attachments or data files from websites)	280	56.1	0.00	39.0	0.00	4.9	3.08
Handling of many applications at the same time	280	43.9	4.9	22.0	4.9	24.4	3.06
Send or receive text	280	0.00	29.3	29.3	0.00	41.5	3.02
Play music	280	2.4	2.4	22.0	39.0	34.1	3.00
Record a video	280	0.00	2.4	39.0	34.1	24.4	2.98
Multimedia Messaging Services (MMS)- includes animation, graphics and music in a message	280	0.00	0.00	48.8	34.1	17.1	2.96
Watch a video / movie	280	51.2	2.4	17.1	26.8	2.4	2.74
Post a photo or video online	280	34.1	34.1	4.9	26.8	0.00	2.74
Do online banking	280	51.2	2.4	29.3	2.4	14.6	2.72
Allow you to enter, monitor, track, and search for all sorts of information (news coverage, weather reports, traffic information, GPS, MAPS, etc)	280	41.5	29.3	29.3	0.00		2.68
Make / receive calls	280	2.4	2.4	22.0	39.0	34.2	2.56
Do online shopping	280	39.0	2.4	0.00	34.1	24.5	2.48
Smart phones are the hot area for mobile business software developers	280	48.8	0.00	0.00	34.1	17.1	2.38
<b>Total</b>	<b>280</b>						

Source: Research data.

As shown in Table 4.12 respondents indicated that instant messaging was a major application that contributed to increased usage of Smartphone in the market with a mean of (3.88). Downloading ability by the Smartphone was a feature that contributed to increased usage of the Smartphone in the market with a mean of (3.76). Access to social network sites like blogs, face book and tweeter was an application that contributed to increased usage of Smartphone in the market with a mean of (3.71).

Some of the respondents indicated that teleconferencing was an application that contributed to increased usage of Smartphone in the market with a mean of (3.68). Respondents indicated that different options to internet access like Wi-Fi and LAN were applications that increased the demand of the Smartphone in the market with a mean of (3.63). Support multiple E-mail accounts application of the Smartphone contributed to increased demand of the Smartphone in the market with a mean of (3.61). Some of the respondents indicated that video conferencing and Skype application led to increased usage of the Smartphone in the market with a mean of (3.51). Playing games application of the Smartphone resulted to increased usage of the Smartphone with a mean of (3.34).

Receive and review documents applicability like edit Microsoft Word, Excel and PowerPoint files in the Smartphone contribute to increased usage of the Smartphone in the market with a mean of (3.30). The application of taking high quality pictures increased the usage of smart phones in the market with a mean of (3.20). Managing personal time and schedules was an application respondents indicated contributed to increased usage of the Smartphone in the market with a mean of (3.18).



Managing work life and effective communication with work teams through corporate e-mails, access to company computer network was a major application that resulted to increased usage of Smartphone with a mean of (3.16). Advanced security application of the Smartphone was another factor indicated by respondents that contributed to the usage of a smart phone in the market with a mean of (3.12). Information sharing applicability feature of the Smartphone influenced the increased usage of the smart phone in the market with a mean of (3.08). Handling of many applications at the same time by the Smartphone also contributed to the increased usage with a mean of (3.06).

Send or receive text application of the Smartphone contributed to increased usage of the Smartphone in the market with a mean of (3.02). The music application of the Smartphone influenced respondents to purchase it with a mean of (3.00). Video recording ability contributed to increased usage of the Smartphone with a mean of (2.98). Multimedia Messaging Services (MMS) increased the demand of the Smartphone in the market with a mean of (2.96). Video / movie/ photo application of the Smartphone influenced the respondents to purchase it with a mean of (2.70). Online banking application of the Smartphone contributed to increased usage of the Smartphone in the market due to minimal costs associated with a mean of (2.72).

Ability of the Smartphone to allow users to enter, monitor, track, and search for all sorts of information including news coverage, weather reports, traffic information, GPS, and maps contributed to increased usage of the Smartphone in the market with a mean of (2.68). The ability of respondents to make call and receive by using a smart phone contributed to increased usage of a smart phone in the market with a mean of (2.56). Do online shopping was an application of the Smartphone that was suggested by respondents contributed to increased usage

of the Smartphone with a mean of (2.48). Some respondents indicated that Smartphone application of developing software was a major factor that contributed to increased usage of the Smartphone in the market Smartphone are the hot area for mobile business software developers with a mean of (2.38).

#### 4.14: Factors contributed to growth of smart phone penetration

Respondents were asked to indicate the Factors contributed to growth of smart phone penetration and indicated as shown in Table 4.13:

**Table 4.13: Factors contributed to growth of smart phone penetration**

Factors contributed to growth of smart phone penetration	N	Very great extent	Great extent	Moderate extent	Small extent	Not at all	Mean
		[5]	[4]	[3]	[2]	[1]	
Instant messaging (push mail / e-mail alerts)	280	51.2	2.4	29.3	2.4	14.6	3.88
Downloadable Application	280	46.3	2.4	34.1	14.6	2.4	3.76
Access to social network sites (blogs, facebook, Tweeter,etc)	280	56.1	0.00	39.0	0.00	4.9	3.71
Teleconference	280	61.0	0.00	2.4	36.6	0.00	3.68
Different options to internet access (wi-fi, LAN)	280	61.0	0.00	2.4	36.6	0.00	3.63
Supports multiple E-mail accounts	280	61.0	0.00	2.4	36.6	0.00	3.61
Video (skype, conferencing)	280	0.00	0.00	2.4	61.0	36.6	3.51
Playing games	280	39.0	24.4	0.00	34.1	2.4	3.34
Receive and review documents (edit Microsoft Word, Excel and PowerPoint)	280	48.8	0.00	0.00	34.1	17.1	3.30

files							
Take pictures (High resolution camera)	280	43.9	4.9	22.0	4.9	24.4	3.20
Managing personal time and schedules (smartphone handsets can function as personal organisers, with electronic diaries, contact lists, and automatic reminders)	280	34.1	34.1	4.9	26.8	0.00	3.18
Manage work life ( enable effective communication with work teams through corporate e-mails, access to company computer network, etc)	280	51.2	2.4	29.3	2.4	14.6	3.16
Security features	280	46.3	2.4	34.1	14.6	2.4	3.12
Information sharing (data can be received and transmitted via a smartphone, such as large e-mail attachments or data files from websites)	280	56.1	0.00	39.0	0.00	4.9	3.08
Handling of many applications at the same time	280	43.9	4.9	22.0	4.9	24.4	3.06
Send or receive text	280	0.00	29.3	29.3	0.00	41.5	3.02
Play music	280	2.4	2.4	22.0	39.0	34.1	3.00
Record a video	280	0.00	2.4	39.0	34.1	24.4	2.98
Multimedia Messaging Services (MMS) - includes animation, graphics and music in a message	280	0.00	0.00	48.8	34.1	17.1	2.96
Watch a video / movie	280	51.2	2.4	17.1	26.8	2.4	2.74
Post a photo or video online	280	34.1	34.1	4.9	26.8	0.00	2.74
Do online banking	280	51.2	2.4	29.3	2.4	14.6	2.72
Allow you to enter, monitor, track, and search for all sorts of information (news coverage, weather reports, traffic information, GPS, MAPS, etc)	280	41.5	29.3	29.3	0.00		2.68
Make / receive calls	280	2.4	2.4	22.0	39.0	34.2	2.56
Do online shopping	280	39.0	2.4	0.00	34.1	24.5	2.48
Smart phones are the hot area for mobile business software developers	280	48.8	0.00	0.00	34.1	17.1	2.38
<b>Total</b>	<b>280</b>						

Source: Research data.

As shown in Table 4.13 respondents indicated that instant messaging was a major factor that contributed to increased growth of Smartphone in the market with a mean of (3.88). Downloading ability by the Smartphone was a factor that contributed to increased growth of the Smartphone in the market with a mean of (3.76). Access to social network sites like blogs, face book and tweeter was a factor that contributed to increased usage of Smartphone in the market with a mean of (3.71).

Some of the respondents indicated that teleconferencing was an factor that contributed to increased growth of Smartphone in the market with a mean of (3.68). Respondents indicated that different options to internet access like Wi-Fi and LAN were factors that increased the growth of the Smartphone in the market with a mean of (3.63). Support multiple E-mail accounts factor of the Smartphone contributed to increased demand of the Smartphone in the market with a mean of (3.61).

Some of the respondents indicated that video conferencing and Skype application led to increased growth of the Smartphone in the market with a mean of (3.51). Playing games factor of the Smartphone resulted to increased growth of the Smartphone with a mean of (3.34). Receive and review documents applicability like edit Microsoft Word, Excel and PowerPoint files in the Smartphone contribute to increased growth of the Smartphone in the market with a mean of (3.30). The factor of taking high quality pictures increased the usage of smart phones in the market with a mean of (3.20).

Managing personal time and schedules was factor respondents indicated contributed to increased growth of the Smartphone in the market with a mean of (3.18). Managing work life and effective communication with work teams through corporate e-mails, access to company computer

network was a major factor that resulted to increased growth of Smartphone with a mean of (3.16). Advanced security application of the Smartphone was a factor indicated by respondents that contributed to the growth of a smart phone in the market with a mean of (3.12). Information sharing applicability feature of the Smartphone influenced the increased growth of the smart phone in the market with a mean of (3.08).

Handling of many applications at the same time by the Smartphone also contributed to the increased growth with a mean of (3.06). Send or receive text application factor of the Smartphone contributed to increased growth of the Smartphone in the market with a mean of (3.02). The music application factor of the Smartphone influenced respondents to purchase it with a mean of (3.00). Video recording ability contributed to increased growth of the Smartphone with a mean of (2.98). Multimedia Messaging Services (MMS) increased the growth of the Smartphone in the market with a mean of (2.96).

Video / movie/ photo application factor of the Smartphone influenced the respondents to purchase it with a mean of (2.70). Online banking applicability factor of the Smartphone contributed to increased growth of the Smartphone in the market due to minimal costs associated with a mean of (2.72). Ability of the Smartphone to allow users to enter, monitor, track, and search for all sorts of information including news coverage, weather reports, traffic information, GPS, and maps contributed to increased growth of the Smartphone in the market with a mean of (2.68). The ability of respondents to make call and receive by using a smart phone contributed to increased growth of a smart phone in the market with a mean of (2.56).

Online shopping was an application of the Smartphone that was suggested by respondents contributed to increased growth of the Smartphone with a mean of (2.48). Some respondents

indicated that Smartphone application of developing software was a major factor that contributed to increased growth of the Smartphone in the market with a mean of (2.38).

#### 4.15: Social needs that influence the penetration and usage of Smartphone

Respondents were asked to indicate the Social needs that influence the penetration and usage of Smartphone and indicated as shown in Table 4.14:

**Table 4.14: Social needs that influence the penetration and usage of Smartphone**

Social needs that influence the penetration and usage of Smartphone	N	Strongly agree	Agree	Moderate,	Disagree	Strongly Disagree	Mean
		[5]	[4]	[3]	[2]	[1]	
Communicate / Stay connected with others / stay in touch	280	43.9	4.9	22.0	4.9	24.4	3.88
Networking through social and professional networking sites	280	41.5	29.3	29.3	0.00	0.00	3.88
Keep abreast on current affairs (news, sports, politics, etc)	280	39.0	2.4	22.0	2.4	34.1	3.71
To be perceived as being trendy "with it"	280	39.0	2.4	0.00	34.1	24.4	3.71
To fit in with the social circles	280	48.8	0.00	0.00	34.1	17.1	3.63
Assimilate / influence non users to acquire smart phones	280	51.2	2.4	17.1	26.8	2.4	3.63
No need to work late or work over the weekends, thus more time with family and friends.	280	51.2	2.4	17.1	26.8	2.4	3.63
Consumers are getting addicted to their smart phones	280	2.4	51.2	29.3	2.4	14.6	3.30
Smart phones are encouraging voice calls / data	280	46.3	2.4	34.1	14.6	2.4	3.20
<b>Total</b>	<b>280</b>						

Source: Research data.

As shown in Table 4.14, most of the respondents indicated that communicating and getting in touch with their friends and social networks were the social factors that influenced penetration and usage of the Smartphone in the market with a mean of (3.88). Most of the respondents indicated that keeping in touch with current affairs like news, sports, and politics and being perceived as trend were some of the social factors that contributed to penetration and usage of Smartphones with a mean (3.71).

To fit in social circles, ability to influence non users, and family interaction were social factors that contributed to penetration and usage of Smartphones with a mean of (3.63). Addiction to Smartphone was a factor contributed to penetration and usage of Smartphones with a mean of (3.30) while encouraging voice of Smartphone was a factor that contributed to penetration and usage of Smartphones with a mean (3.20).

#### **4.16: Attributes that influenced the penetration and usage of Smartphone**

Respondents were asked to indicate the Social needs that influence the penetration and usage of Smartphone and indicated as shown in Table 4.15:

**Table 4.15: Attributes that influenced the penetration and usage of Smartphone**

Attributes in regards to ease of use influence the penetration and usage of Smartphone	N	Very great extent	Great extent	Moderate extent	Small extent	Not at all	Mean
		[5]	[4]	[3]	[2]	[1]	
Great performance (fast Web browsing and e-mail use)	280	51.2	2.4	29.3	2.4	14.6	4.34
Smart phones have an extensive after sales support	280	51.2	2.4	29.3	2.4	14.6	4.34
Previous brand experience	280	39.0	2.4	22.0	2.4	34.1	4.17
Good user experience (easy navigation between applications and services)	280	39.0	2.4	22.0	2.4	34.1	4.17
<b>Total</b>	<b>280</b>						

**Source:** Research data.

As shown in Table 4.15, Great performance features like fast Web browsing and e-mail use and extensive after sales support contributed to the penetration and usage of a Smartphone with a mean of (4.34) while previous brand experience and good user experience were attributes that contributed to penetration and usage of a Smartphone with a mean of (4.17).

#### **4.17: Commonly Used Smartphone Brands**

Respondents were asked to indicate the commonly used Smartphone brand and indicated as shown in Table 4.16:



**Table 4.16: Commonly Used Smartphone Brand**

Brand commonly Used	Frequency	Percentage (%)
Nokia	69	25
Samsung	50	18
IDEOS	31	11
Blackberry	28	10
i-Phone	24	9
HTC	18	6
Techno	16	6
LG	16	6
Sonny Ericson	13	5
Alcatel	11	4
<b>Total</b>	<b>280</b>	<b>100.0</b>

**Source:** Research data.

As shown in Table 4.16, 25% of the respondents indicated that Nokia brand was the most commonly used Smartphone brand in the market. 18% of them indicated that Samsung was second in ranking. Ideos was ranked third with 11% of the respondents. 10% of the respondents ranked the Blackberry as the fourth brand. 9% of the respondents ranked I-phone fifth. HTC, Techno, and LG were ranked sixth due to inadequate promotions from manufacturers. 5% of the respondents ranked Sonny Ericson seventh while 4% of them ranked Alcatel eighth. Brand Promotions were reasons given by respondents that contributed to brand awareness and usage among consumers.

#### **4.18: Factors that influence the choice of brand of the Smartphone**

Respondents were asked to indicate the factors that influenced the choice of brand of the Smartphone and indicated as shown in Table 4.17:

**Table 4.17: Factors that influence the choice of brand of the Smartphone**

	N	Very great extent	Great extent	Moderate extent	Small extent	Not at all	Mean
Factors that influence the choice of brand of the Smartphone		[5]	[4]	[3]	[2]	[1]	
Aesthetics / Design (color, touch screen, QWERTY keyboard, etc)	280	41.5	29.3	29.3	0.00	0.00	3.68
Recommendation by friends/family	280	2.4	2.4	22.0	0.00	73.1	3.63
Variety of applications	280	0.00	2.4	39.0	34.1	24.4	3.34
User friendly (Simple to use)	280	61.0	0.00	2.4	36.6	0.00	3.30
Battery Life	280	61.0	0.00	2.4	36.6	0.00	3.30
After sales Supports	280	61.0	0.00	2.4	36.6	0.00	3.30
Memory Capacity	280	0.00	61.0	2.4	36.6	0.00	3.30
Recommendation by mobile phone store	280	48.8	0.00	0.00	34.1	17.1	3.12
Affordability	280	48.8	0.00	0.00	34.1	17.1	3.12
Reputable brand	280	48.8	0.00	0.00	34.1	17.1	3.12
Is classy	280	48.8	0.00	0.00	34.1	17.1	3.12
Compliments my lifestyle; makes me feel complete	280	48.8	0.00	0.00	34.1	17.1	3.12
Screen Size	280	43.9	4.9	22.0	4.9	24.4	2.88
Durability	280	43.9	4.9	22.0	4.9	24.4	2.88
Open source operating system	280	43.9	4.9	22.0	4.9	24.4	2.88
Closed source operating system	280	43.9	4.9	22.0	4.9	24.4	2.88
Lack of / minimal counterfeits	280	43.9	4.9	22.0	4.9	24.4	2.88
Size	280	43.9	4.9	22.0	4.9	24.4	2.88
<b>Total</b>	<b>280</b>						

Source: Research data

As shown in table 4.17, most of the respondents were influenced to purchase the smart phone due to improved features which included aesthetics, design, touch screen, and qwerty keyboard with a mean of (3.68). Recommendation by friends and family was a feature that influenced respondents to purchase a Smartphone with a mean of (3.63).

Some of the respondents indicated that the variety of applications of the Smartphone influenced them to purchase it with a mean of (3.34). User friendly, long lasting battery and memory capacity attributes of the Smartphone contributed to increased purchase with a mean of (3.30). Recommendation by mobile phone store, affordability, reputable brand, classy, compliments self esteem were factors respondents indicated that influenced them to purchase the Smartphone with a mean of (3.12). Screen Size, durability, open source operating system, lack of / minimal counterfeits, and size of the Smartphone were factors that contributed to respondents to purchase the Smartphone with a mean of (2.88).

#### **4.19: Smartphone source of information**

Respondents were asked to indicate the Source of information with regard to the purchase of a Smartphone and indicated as shown in Table 4.18:

**Table 4.18: Smartphone source of information**

Source of information	Frequency	Percentage (%)
Reviews from the internet	69	25
Friends / family recommendation	83	30
Recommendation from a general retail outlet	31	11
Recommendation from the <b>brand</b> representative (retail outlet, pitched tent, road shows, etc)	28	11
Written media (newspapers, magazines, etc)	29	11
Recommendation from mobile service operator (Safaricom, Airtel, Yu, Orange, etc outlets)	24	9
Visual media (TV, movies, etc)	16	6
Audio media (Radio, etc)	16	6
<b>Total</b>	<b>280</b>	

**Source: Research data.**

As shown in Table 4.18, 30% of the respondents obtained information from friends and family members to purchase a Smartphone. 25% of them they indicated that they received information from the internet. 11% of them indicated that they obtained information from print media and retail outlets. 9% of them indicated that they obtained information from mobile service operator like Safaricom, Airtel, Yu, Orange and other outlets like dealers. 6% of them indicated that they obtained information from Visual media like Television and Radio advertisements.

## **CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter summarizes the major findings of this study. This study sought to find out the factors contributing to the penetration and use of Smartphones in Kenya. In addition, this chapter provides a direction for further studies and also gives some recommendations for policy making by the relevant authorities. Questionnaires were used to gather primary data. The questionnaires comprised of both closed and open-ended questions and were strictly administered by the researcher.

### **5.2 Summary**

This study sought to establish the factors contributing to the penetration and use of Smartphones in Kenya. Attributes, applications, specifications, social factors and brand awareness were major factors that contributed to the use and penetration of the Smartphones in the market. Due technological changes in the telecommunication industry and change of customer tastes and preferences and changing business environment, most of the consumers are now necessitated to own and use advanced Smartphones to enhance their social and business life. Smartphone manufacturers should be in a position to promote and create brand awareness in order to achieve profit maximization and cost minimization. Their positioning strategies should emphasizing on the marketing mix strategies which include; product strategy, pricing strategy, promotion strategy, distribution strategy, people strategy, process strategy and physical evidence.

The study established that most of the consumers were influenced by their friends and family members to purchase a smart phone. The study established that the fascinating features of the

Smartphone which included aesthetics, design and appearance increased the usage and penetration of the Smartphone in the market. It was established that Social class played a major role in the usage and penetration of the Smartphone in the market. It was established that business application features of the Smartphoned increased the usage and penetration of the Smartphone in the market. It was established that brand awareness campaigns through print media and electronic media by phone manufacturers played a major role in the usage and penetration of the Smartphone in the market.

### **5.3 Conclusions**

The findings indicate that phone manufacturers endeavor to achieve some competitive advantage over their competitors in the dynamic business environment by using different advanced features of their products in order to attract and retain a large market share. They emphasized that phone manufacturers should position their products from different perspectives which included; product strategy, pricing strategy, promotion strategy, distribution strategy, people strategy, process strategy and physical evidence. It is concluded that if a proper mechanism is put in place by Smartphone manufacturing companies a large number of consumers are likely to purchase their products thus increased market share and profits.

### **5.4 Recommendations**

#### **5.4.1 Policy Recommendations**

The study found out that quite a number of features of the Smartphone contributed to slow adoption of Smartphones in the Kenyan market. Therefore, this study recommends that Smartphone manufacturers should improve their products like durability of the battery life to enable users perform many applications on the device. The study found out that most of the

consumers had little knowledge on Smartphone. Therefore, this study recommends that Smartphone manufacturers should conduct aggressive marketing campaigns to sensitize the public on the benefits of the Smartphone compared to ordinary phones.

The study found out that Smartphones are expensive and targeted a particular social class. Therefore, the study recommends that the government should intervene by reducing levies charged on mobile phone dealers thus making it easier for ordinary Kenyans to purchase Smartphones. The study found out that most of the consumers did not value so much feature of the Smartphone since they did not have knowledge on technological advancements.

Therefore the study recommends that the Government should formulate policies that enable the Communication Commission of Kenya to establish digital training centre in urban and rural areas where Kenyans will be enlightened on computer application skills. Internet connectivity through fiber Optic cable initiative by the Government of Kenya is one of the major Social economic developments that will make Kenyans recognize the value of telecommunication in their day to day operations.

#### **5.4.2 Suggestions for Further Research**

Future studies should explore the reasons behind the factors contributing to the penetration and use of Smartphones Kenya. Researchers should go ahead and establish the reasons behind the penetration and use of Smartphone Kenya. Future studies will minimize the marketing challenges experienced by Smartphone manufacturers in the market hence competitive edge

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## APPENDIX I: QUESTIONNAIRE

I am currently conducting a study on Smartphones and would like to ask you a few questions in regards to this.

The Information you provide will be kept strictly anonymous and confidential and will be used solely for the purpose of the study.

Your honest feedback will be highly appreciated

### Definition of a Smartphone

The term Smartphone refers to a programmable mobile phone that offers advanced capabilities and features that help individuals in their daily work and personal life. It contains functions such as instant messaging, downloading applications, utilizing information services such as WiFi and Global Positioning System (GPS) and entertainment

### Section A: General information (Tick as appropriate)

1. Respondents Name.....
2. Respondents Telephone Number.....
3. Gender
  - a) Female ( )
  - b) Male ( )
4. What is your age bracket?
  - a) 21 – 30 years ( )
  - b) 31 – 40 years ( )
  - c) 41 – 50 years ( )
  - d) Over 50 years ( )
5. What is your current / highest level of education qualification?
  - a) Post graduate level (Masters, doctorate) ( )
  - b) Undergraduate ( )
  - c) Tertiary College ( )
  - d) Secondary ( )

6. Occupational status (tick one)

- a) Student ( )
- b) Employed ( )
- c) Unemployed ( )
- d) Self employed / business person ( )

7. Which mobile telephony service provider/s are you currently using?

8. Who is the provider for the SIM card you MAINLY USE By 'mainly' I mean which one do you use most often? (One answer only)

Qn. 7

Qn 8

Currently Using

Mainly Use

- |                        |                      |                      |
|------------------------|----------------------|----------------------|
| a) Safaricom.....      | <input type="text"/> | <input type="text"/> |
| b) Zain/airtel.....    | <input type="text"/> | <input type="text"/> |
| c) Orange/ TelKom..... | <input type="text"/> | <input type="text"/> |
| d) YU.....             | <input type="text"/> | <input type="text"/> |

9. How many active SIM card/s do you currently have? By active, we mean they are operational and you are using it/them currently either in your phone, or Modem?

- a) One ( )
- b) Two ( )
- c) Three ( )
- d) Four ( )
- e) Over four cards ( )

**Section B: Factors contributing to the purchase and usage of Smartphones (Tick as appropriate)**

10. Do you own a Smartphone?

- a) Yes ..... ( )
- b) No ..... ( ) <CLOSE>

11. How did you acquire the Smartphone?

- a) Purchase (self) ( )
- b) Gift ( )

- c) Provided by employer ( )
- d) Lottery / promotions / competitions ( )

12. How long have you owned a Smartphone? (Tick as applicable)

- a) Less than two years ( )
- b) 2-5 years ( )
- c) 6-10 years ( )
- d) Over 10 years ( )

**Question 13 is applicable to those who purchased a Smartphone in Question 11 above**

13. In general, to what extent did the following factors influence your decision to purchase a Smartphone?

Use 1- Not at all, 2-Small extent, 3-Moderate extent, 4-Great extent and 5-Very great extent.

	1	2	3	4	5
Newest technology (e.g., new functions, new applications)					
Design and appearance					
Productivity tool of choice (can do everything on these devices)					
Attractive promotional offers from mobile phone operations					
Word of mouth (friends, peers, affiliations and family use Smart Phones)					
Technology investment is focused on smart phones					
They're getting cheaper					

14. Specifically, to what extent do you agree with the following Smartphone specifications as having influenced your purchase decision?

Use 1- Strongly Disagree, 2- Disagree, 3- Moderate, 4- Agree and 5-strongly agree.

	1	2	3	4	5
Aesthetics / Design (touch screen, QWERTY keyboard, etc)					
Internet access / (Built-in Wi-Fi Adapter)					
Price					
Screen Size					
Media /Entertainment (Music Player and Formats)					
User friendly (Simplicity)					
Brand					
Battery Life					
Business Supports					
Memory Capacity					

15. To what extent do the following factors influence usage of the Smartphones?

Use 1- Not at all, 2-Small extent, 3-Moderate extent, 4-Great extent and 5-Very great extent.

	1	2	3	4	5
Downloadable Application					
Video (skype, conferencing)					
Teleconference					
Access to social network sites (blogs, facebook, Tweeter,etc)					
Different options to internet access (wi-fi, LAN)					
Supports multiple E-mail accounts					
Playing games					
Instant messaging (push mail / e-mail alerts)					
Receive and review documents (edit Microsoft Word, Excel and PowerPoint files)					
Take pictures (High resolution camera)					

Managing personal time and schedules (smartphone handsets can function as personal organisers, with electronic diaries, contact lists, and automatic reminders)					
Manage work life ( enable effective communication with work teams through corporate e-mails, access to company computer network, etc)					
Security features					
Information sharing (data can be received and transmitted via a smartphone, such as large e-mail attachments or data files from websites)					
Handling of many applications at the same time					
Send or receive text					
Play music					
Record a video					
Multimedia Messaging Services (MMS) - includes animation, graphics and music in a message					
Watch a video / movie					
Post a photo or video online					
Do online banking					
Allow you to enter, monitor, track, and search for all sorts of information (news coverage, weather reports, traffic information, GPS, MAPS, etc)					
Make / receive calls					
Do online shopping					
Smart phones are <i>the hot area</i> for mobile business software developers					

### Section C: Factors contributing to the penetration of Smartphones

16. The following factors have contributed to growth of smart phone penetration.

Please rank in order of importance:

Use 1- Not at all, 2-Small extent, 3-Moderate extent, 4-Great extent and 5-Very great extent.

	1	2	3	4	5
Downloadable Application					
Video (skype, conferencing)					
Teleconference					
Access to social network sites (blogs, facebook, Tweeter,etc)					
Different options to internet access (wi-fi, LAN)					
Supports multiple E-mail accounts					
Playing games					
Instant messaging (push mail / e-mail alerts)					
Receive and review documents (edit Microsoft Word, Excel and PowerPoint files)					
Take pictures (High resolution camera)					
Managing personal time and schedules (smartphone handsets can function as personal organisers, with electronic diaries, contact lists, and automatic reminders)					
Manage work life ( enable effective communication with work teams through corporate e-mails, access to company computer network, etc)					
Security features					
Information sharing (data can be received and transmitted via a smartphone, such as large e-mail attachments or data files from websites)					
Handling of many applications at the same time					
Send or receive text					
Play music					
Record a video					



Multimedia Messaging Services (MMS) - includes animation, graphics and music in a message					
Watch a video / movie					
Post a photo or video online					
Do online banking					
Allow you to enter, monitor, track, and search for all sorts of information (news coverage, weather reports, traffic information, GPS, MAPS, etc)					
Make / receive calls					
Do online shopping					
Smart phones are <i>the hot area</i> for mobile business software developers					

17. The following social needs that influence the penetration and usage of Smartphone.

To what extent do you agree or disagree with these needs

Use 1- Strongly Disagree, 2- Disagree, 3- Moderate, 4- Agree and 5-strongly agree.

	1	2	3	4	5
Communicate / Stay connected with others / stay in touch					
Networking through social and professional networking sites					
Keep abreast on current affairs (news, sports, politics, etc)					
To be perceived as being trendy ..... "with it"					
To fit in with the social circles					
Assimilate / influence non users to acquire smart phones					
No need to work late or work over the weekends, thus more time with family and friends.					
Consumers are getting addicted to their smart phones					
Smart phones are encouraging voice calls / data					

18. To what extent have the following attributes in regards to ease of use influence the penetration and usage of Smartphone?

Use 1- Not at all, 2-Small extent, 3-Moderate extent, 4-Great extent and 5-Very great extent.

	1	2	3	4	5
Great performance (fast Web browsing and e-mail use)					
Smart phones have an extensive after sales support					
Previous brand experience					
Good user experience (easy navigation between applications and services)					

**Section D: Factors contributing to the purchase of brand of Smartphones**

19. What brand of Smartphone do you use most often? (Tick one)

- a) Nokia ..... ( )
- b) Samsung ..... ( )
- c) IDEOS ..... ( )
- d) Blackberry ..... ( )
- e) i-Phone ..... ( )
- f) HTC ..... ( )
- g) Techno ..... ( )
- h) LG ..... ( )
- i) Sonny Ericson ..... ( )
- j) Alcatel ..... ( )

Other (write in) .....

**Question 20 and 21 is applicable to those who have purchased a Smartphone in Question 11 above**

20. Specifically, to what extent did the following factors influence choice of brand of the Smartphone?

Use 1- Not at all, 2-Small extent, 3-Moderate extent, 4-Great extent and 5-Very great extent.

	1	2	3	4	5
Aesthetics / Design (color, touch screen, QWERTY keyboard, etc)					
Affordability					
Screen Size					
User friendly (Simple to use)					
Battery Life					
After sales Supports					
Memory Capacity					
Recommendation by mobile phone store					
Recommendation by friends/family					
It is classy					
Reputable brand					
Compliments my lifestyle; makes me feel complete					
Variety of applications					
Durability					
Open source operating system					
Closed source operating system					
Lack of / minimal counterfeits					
Size					

Other

.....

21. Where did you get information on which brand of Smartphone to purchase? (tick one)

Reviews from the internet	
Friends / family recommendation	
Recommendation from a general retail outlet	
Recommendation from the <b>brand</b> representative (retail outlet, pitched tent, road shows, etc)	
Recommendation from mobile service operator (Safaricom, Airtel, Yu, Orange, etc outlets)	
Written media (newspapers, magazines, etc)	
Visual media (TV, movies, etc)	
Audio media (Radio, etc)	

**Thank You for your participation**