

**FACTORS AFFECTING CONSUMER ADOPTION AND USAGE OF  
INNOVATIVE MOBILE SERVICE OFFERINGS IN NAIROBI**

**BY**

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**Research Project Report Presented in Partial fulfillment of the Requirements for  
the Award of the Diploma in Business Management, School of Continuing and  
Distance Learning, University of Nairobi**

**MAY, 2011**

## DECLARATION

This Research Project Report is my original work and has not been submitted for the award of Degree or Diploma in any other University or Institution of higher learning.

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## **DEDICATION**

This research study is dedicated to my siblings; Fowzia, Salim, Hindia, Balqisa, Abdulqani, Sado and Mum and Dad.

## ACKNOWLEDGEMENT

I wish to thank my supervisor Mr. Kepha Mogeni who tirelessly worked to guide me professionally in the research process. Also, I thank my colleagues Ahmed and the entire 2008 class for having given me the encouragement throughout the period of writing the research proposal. Special thanks also goes to Sharon for having sacrificed her time in typing and proof reading the research project.

## TABLE OF CONTENTS

|                           |      |
|---------------------------|------|
| DECLARATION .....         | ii   |
| DEDICATION .....          | iii  |
| ACKNOWLEDGEMENT .....     | iv   |
| LIST OF FIGURES .....     | viii |
| LIST OF TABLES .....      | ix   |
| ABSTRACT .....            | x    |
| ABBREVIATIONS .....       | xi   |
| DEFINITION OF TERMS ..... | xii  |

### CHAPTER ONE: INTRODUCTION

|                                      |   |
|--------------------------------------|---|
| 1.1. Background .....                | 1 |
| 1.2. Statement of the Problem .....  | 4 |
| 1.3. Objectives of the Study .....   | 4 |
| 1.4. Research Questions .....        | 4 |
| 1.5. Significance of the study ..... | 5 |
| 1.6. Scope of the Study .....        | 5 |
| 1.7. Limitations .....               | 5 |

### CHAPTER TWO: LITERATURE REVIEW

|  |    |
|--|----|
| 2.1. Innovative Mobile Value-added Services .....          | 6  |
| 2.1.1. Innovation .....                                    | 6  |
| 2.1.2. Value- added Services .....                         | 8  |
| 2.1.3. Mobile Service Offerings by Network Operators ..... | 8  |
| 2.2. Adoption and Use of Services by Consumers .....       | 9  |
| 2.3. Research Gap .....                                    | 13 |
| 2.4. Conceptual Framework .....                            | 14 |

### CHAPTER THREE: RESEARCH METHODOLOGY

|                                       |    |
|---------------------------------------|----|
| 3.1. Research Design .....            | 16 |
| 3.2. Population .....                 | 16 |
| 3.3. Sample Design .....              | 16 |
| 3.4. Data Collection Method .....     | 17 |
| 3.5. Data Collection Procedures ..... | 17 |

|   |    |
|---|----|
| 3.6. Data Analysis and Presentation ..... | 18 |
|---|----|

## **CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION OF RESULTS**

|                                     |    |
|-------------------------------------|----|
| 4.1. Introduction.....              | 19 |
| 4.2. Data Analysis .....            | 19 |
| 4.3. Quantitative Analysis.....     | 19 |
| 4.3.1. Gender.....                  | 19 |
| 4.3.2. Occupation .....             | 20 |
| 4.3.3. Network.....                 | 21 |
| 4.3.4. Satisfaction Level.....      | 21 |
| 4.3.5. Awareness .....              | 24 |
| 4.3.6. Sources of Information ..... | 24 |
| 4.3.7. Ease to use.....             | 25 |
| 4.3.8. Affordability .....          | 26 |
| 4.3.9. Customer Value .....         | 26 |
| 4.3.10. Availability .....          | 33 |
| 4.3.11. Correlations.....           | 34 |
| 4.4. Qualitative Analysis.....      | 37 |
| 4.4.1. Awareness .....              | 37 |
| 4.4.2. Challenges.....              | 37 |
| 4.4.3. Suggestions .....            | 39 |

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

|  |    |
|--|----|
| 5.1. Summary .....                             | 40 |
| 5.1.1. Awareness .....                         | 40 |
| 5.1.2. Ease of Use .....                       | 41 |
| 5.1.3. Affordability .....                     | 41 |
| 5.1.4. Value .....                             | 41 |
| 5.1.5. Availability .....                      | 42 |
| 5.1.6. Summary by Service.....                 | 43 |
| 5.1.7. Users' perception .....                 | 44 |
| 5.2. Conclusions.....                          | 44 |
| 5.3. Recommendations on policy issues .....    | 45 |
| 5.4. Recommendations for Further Research..... | 47 |

|  |    |
|--|----|
| REFERENCES .....                         | 48 |
| APPENDIX I: BUDGET .....                 | 52 |
| APPENDIX II: RESEARCH QUESTIONNAIRE..... | 53 |

## LIST OF FIGURES

|  |    |
|--|----|
| Figure 2.4: Factors affecting consumer adoption and usage of innovative mobile service ..... | 14 |
| Fig 4.2. Respondents Occupation .....  | 20 |
| Fig 4.3. Respondents Service Provider .....  | 21 |
| Fig 4.4. Respondents satisfaction level (Safaricom).....                                     | 22 |
| Fig 4.5. Respondents satisfaction level (Orange) .....                                       | 23 |
| Fig. 4.6. Respondents satisfaction level (Airtel).....                                       | 24 |
| Fig. 4.7. Respondents Voice .....  | 27 |
| Fig 4.8. Customer Value – SMS .....  | 28 |
| Fig.4.9. Customer Value-Information Updates .....  | 28 |
| Fig 4.10. Customer Value – Downloads.....  | 29 |
| Fig 4.11. Customer Value – Accessing Internet .....  | 30 |
| Fig 4.12. Customer Value – Accessing Email .....   | 31 |
| Fig 4.13: Customer Value – Money Transfer .....  | 31 |
| Fig 4.14: Customer value – Airtime Sharing .....   | 32 |
| Fig 4.15: Availability .....   | 33 |

## LIST OF TABLES

|  |    |
|--|----|
| Table 3.1: Sample Design .....             | 17 |
| Table 4.1. Ease to use .....               | 25 |
| Table 4.2. Affordability of services ..... | 26 |
| Table 4.3: Availability of services .....  | 33 |
| Table 4.4 Awareness Correlation.....       | 34 |
| Table 4.5 Ease of Use Correlation .....    | 35 |
| Table 4.6 Value Correlation.....           | 35 |
| Table 4.7: Availability Correlation .....  | 36 |
| Table 4.8 Affordability Correlation .....  | 36 |

## ABSTRACT

The aim of the study was to find out the reasons for low adoption and usage of services provided by mobile network operators, by identifying and analyzing the factors which influence adoption and use of these services by consumers. The objective of the study was to determine customer awareness of different mobile services, to establish the factors which lead to utilization of mobile service, and to establish the challenges customers are facing when using different mobile services. The research was conducted in the form of a descriptive survey. The population of the study consisted of consumers of mobile services in Nairobi, and of ages ranging from 15 to over 55. Stratified random sampling was used to randomly select the units of analysis.

Interviews were conducted at the homes of respondents, in the streets and at shopping centers. Factors identified as affecting adoption and usage of mobile services by consumers included awareness, affordability, ease to use, customer value and availability. Affordability was a major issue of concern, with most respondents complaining of the calling rates across networks and the cost of accessing internet and email as being prohibitive. A substantial number of respondents found services difficult to use with a number of services having complicated setup steps. However, consumers' will use a service as long as they consider it to be of high value to them, even though the service might be expensive or hard to use. Awareness and availability are not major contributors to adoption and usage of mobile phone services.

Most services offered by the operators were available in consumers' handsets, and most respondents were aware of the services provided. The respondents indicated that their communication needs could be satisfied by services that are easy to use, affordable and are of value to them. Having a helpful customer care agent and a reliable network would also go a long way in meeting their communication needs. The implications of these findings are that service providers should design service that are affordable and easy to use, and that they should improve their customer care services

## ABBREVIATIONS

|       |   |   |
|-------|---|---|
| IG    | - | First generation                                |
| 2G    | - | Second generation                               |
| 3G    | - | Third generation                                |
| ARPU  | - | Average revenue per user                        |
| GDP   | - | Gross Domestic Product                          |
| IAMAI | - | Internet and mobile association of India        |
| IMRB  | - | Indian market research bureau                   |
| SMS   | - | Short message service                           |
| SPSS  | - | Statistical package for the social sciences     |
| VAS   | - | Value added service                             |
| WIMAX | - | Worldwide Interoperability for microwave access |

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## DEFINITION OF TERMS

**Consumer adoption:** This refers to the continued use of a service or product by a consumer driven by the usability of the product and the amount of value it offers (Smethers and France, 2007).

**Customer value:** The benefit that consumers believe that they will get from a product or service .Successful services are those that provide the users with benefits in excess of the cost after they have started using it (Smethers and France,2007).

**Affordability:** Refers to the price of services and the consumers' ability to pay for the service. The cost of mobile services would affect the demand for such services, and the prices of non-voice mobile applications may also affect the consumer acceptance and usage of enhanced mobile services (Lee, Chan-Olmsted and Kim, 2009).

**Ease of use:** Services that are simple .easy to navigate, easy to learn and easy to manage (Al-Hajri and Tatnall, 2007).

**Awareness:** The level of recognition that consumers have of a particular service/product. Awareness examines three levels of recognition: whether the product/service is the first to come to mind when a consumer is questioned about a particular product category; whether the product/service is one of several that come to mind when a consumer is questioned about a particular product category; and whether or not a consumer has heard of a particular product/service (Kotler and Lune, 2003)

**Innovative mobile services:** Non-core services or all services beyond standard voice calls and SMS transmissions, that add value to the standard service offerings, spurring the subscriber to use their phone more and allowing the operator to drive up their revenue per use (The IMAI and IMRB report, 2006).

# CHAPTER ONE

## INTRODUCTION

### 1.1. Background

There is no recent technological innovation that provides more distinct opportunities for development than mobile telephony. This technology has traditionally offered voice and data services to connect people, but with improving capabilities and cheaper rates, it is a domain that provides a powerful space for innovation. As mobile networks reach increasingly remote populations, the mobile phone is beginning to have a big impact outside its traditional service arena. The opportunities offered by bundles of network operator services are evidenced in all sectors of the society, in particular media, leisure, banking, health, government, commerce and education.

A publication by GSMA development fund (2008) demonstrates how the mobile phone empowers citizens in several developing countries where, through citizen centric services the mobile platform delivers tangible and broad direct and indirect social and economic benefit. Further the research infers that implications on daily life in developing countries appear to be more far-reaching than in the developed countries, creating social capital, improved market efficiency and firm level production, as well as increases in GDP.

Recognition of importance of the developing world to the mobile telephony industry is illustrated in a publication by Internews Europe (2008), where the mobile industry is described as the best paradigm of a bottom of pyramid business, with multi-billion dollar corporations targeting the poor as central, rather than peripheral, to their future. The publication gives examples of corporations like Vodafone who could once command \$100 a month per subscriber, now aggressively target markets like India, where the average is more like \$5 and dropping; Google and Microsoft are looking at the mobile as the next platform for software and information services of all kinds. The resulting competition creates downward pressure on prices and accelerates the move by operators into value-added services, foremost among which are information services.

This competitiveness has already seen the appearance of pockets of technology leapfrog. A high percentage of Kenyans are now using m-commerce. More Jamaicans access the web from mobiles than from desktop computers. The three quarters of the world who have yet to access the internet or experience digital multimedia will mostly do both through mobiles (Internews Europe, 2008).

The Kenyan mobile market is the largest in East Africa and has five major telecommunications network operators. There is one national fixed line operator Telecom Kenya in which the government has 49% shareholding. There are four GSM mobile network operators; Safaricom, Zain, Orange (Telkom Kenya) and Yu (Essar). Safaricom has the highest subscriber base at 13.4 million, followed by Airtel having 2.4 million subscribers. Orange and Yu have 697,000 and 400,000 subscribers respectively (Africa & Middle East Telecom- Week, 2009).

Information and communication technology (ICT) is important in the growth and development of the economy in Kenya. Bitange Ndemo (2006) underlines this in his assertion that the prospect of the Kenyan ICT industry is very bright and that done right this sector within few years would account for the majority of the GDP. Growth Africa Consulting (2006) in their study, "Business opportunity within the IT and Telecommunication industry in Kenya", note that the Kenyan Government goal is to have the ICT industry contribute 10% of the national income by 2010. They go on to state that the ICT industry can be divided into the mobile telephony sub-sector and the rest. The sub-sector, through their business, from mobile phone handsets, accessories and associated service adds contribution approximately 70% of the industry.

The significance of the mobile phone sub-sector is further illustrated in Uhuru Kenyatta's 2009-2010 budget speech (2009:22): "...since 2000 when only about 200,000 Kenyans had the privilege to own a mobile handset, the mobile telephony industry has grown tremendously, now estimated at about 17.5 million subscribers. Mobile telephones have, therefore, become essential aspect of our daily communication and transaction system. To make the telephone sets more affordable to Wananchi and expand the subscription

base, I propose to exempt from VAT, all telephones, for cellular networks or other wireless networks. I do hope the dealers in these products will pass this benefit to ordinary Wananchi by lowering prices". Reducing mobile specific taxes and general consumer taxes such as VAT leads to substantial increases in mobile penetration and usage (Global Mobile Tax Review 2006-2007, Deloitte 2007).

The 2009 half year results for both Safaricom and Airtel show decline of up to 7% in average revenue per user (ARPU). This decline is mainly attributed to falling revenue from voice services amidst reducing call tariffs. The network operators are now shifting focus towards offering enhanced data services to their subscribers. Towards achieving this objective, Safaricom has over the past two years concentrated on improving their data infrastructure with the result that they are currently the sole operator in Kenya offering 3G mobile phone services. Airtel Kenya, on the other hand has reportedly obtained a 3G license. According to Rene Meza, the company will launch its 3G network in the first half of 2010.

As demonstrated above, there is a lot of focus in the mobile telecommunications industry about the opportunities for serving low-income in developing markets. There is also a lot of talk about the social and economic benefits that an increase in mobile penetration can bring to the poorest countries. Also we see that the number of players in the mobile network operators and mobile handset manufacturers, but also software developers like Microsoft and internet search engine providers like Google.

The increase of mobile network operators in Kenya from two in 2008 to four in 2009 has also resulted to increased competition in the service provision space. The voice service, being the core business of network operators, has been most affected by this competition. Great reduction in call tariffs has been witnessed. Drop in voice revenue is illustrated Safaricom 2009 half year results that showed decline of 14.7% points in revenue growth year-on-year. With reduction in voice revenue, mobile network operators are now focusing on data and related services as the growth area in the telecommunication industry. Safaricom in their half year 2009 results, note that internet penetration in Kenya is still low, with less than 10% of the population using internet services.

## **1.2. Statement of the Problem**

Mobile network operators have come up with a myriad of innovative data products and services in an attempt to fill the gap brought about by decline in revenue as illustrated in 1.1 above. However, consumer adoption and usage of these services is low.

This is illustrated in the Safaricom half year 2009 results which lists mobile penetration in Kenya at 47% with Safaricom having 14.5 million subscribers, out of which data users were only 1.8 million (12.4%). This study attempted to find out the reasons for low adoption and usage of these services by identifying and analyzing the factors which influence the adoption and use of mobile phone services by consumers.

The cost of accessing the service and problems of setup and network support of 3G services by service provider and strategies to be adapted by Safaricom to improve speed of access and download and online of edges. Faced with all the challenges the service providers should ensure well management of their products; it is therefore necessary for the strategies being employed by these service providers to ensure good service provision to their customers to meet the competitive edge over their peers.

## **1.3. Objectives of the Study**

To determine customer awareness of different mobile services offered by network operators.

To establish the factors which lead to utilization of mobile services by the consumer?

To establish the challenges customers are facing when using different mobile services and come up with solutions.

## **1.4. Research Questions**

The study is expected to answer the following questions:

Are consumers aware of the different mobile services offered by network operators?

What motivates the consumers to use the mobile services?

What are the challenges experienced by consumers in adopting and using the mobile services?

### **1.5. Significance of the study**

The study will be significant to the mobile network operators since it will provide a wealth of information on the factors influencing adoption and usage of the services that they offer to their consumers. The findings of the study will lead to drawing of various recommendations that will seek to bridge the gap between coming up with innovative products and services that fulfill customers needs, and the implementation of these services and continuously ensuring that these services are indeed used by the intended target group. The study will also contribute to the available body of knowledge on innovative service offerings in the mobile telecommunication industry and factors affecting consumer adoption and usage of services in the mobile telephony industry.

### **1.6. Scope of the Study**

The study was undertaken in Nairobi, which is home to all four mobile network operators and has a wide cross section of consumers, with varied backgrounds, economic status and differing needs, using various mobile services offered by the operators. The study was carried out over a period of five months.

### **1.7. Limitations**

At the beginning of the study, a major limitation was unavailability of books and material on mobile telephony industry in the University of Nairobi Library and other public libraries visited. It was especially difficult to get data on number of mobile phone network subscribers in Nairobi as there are no figures that categorically summarize network subscriber by geographies in Kenya. However, the researcher was able to get a lot of material from Nokia Research centre office in Nairobi where there were various publications and newsletters on mobile telephony. During data collection, there were problems in getting respondents above the age of 50. Another factor was time limitation to carry out. The research due to fact that researcher has time day job.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1. Innovative Mobile Value-added Services**

##### **2.1.1. Innovation**

Innovation is a new way of doing something. It may refer to incremental and emergent or radical and revolutionary changes in thinking, products, processes, or organizations. Contributors to the scholarly literature on innovation typically distinguish between invention, an idea made manifest, and innovation, ideas applied successfully in practice. In many fields, something new must be substantially different to be innovative. In economics the change must increase value, customer value, or producer value. The goal of innovation is positive change, to make someone or something better. Innovation leading to increased productivity is the fundamental source of increasing wealth in an economy (Scotchmer, 2004.)

A definition of innovation from an organizational perspective is given by Luecke and Katz (2003). They defined innovation as the embodiment, combination, or synthesis of knowledge in original, relevant, valued new products, process, or services. They further explain that for innovation to occur, something more than the generation of a creative idea or insight is required; the insight must be put into action to make a genuine difference, resulting for example in new or altered business process within the organization, or changes in the products and services provided.

Chesbrough (2003) suggest that much of the most successful innovation occurs at the boundaries of organizations and industries where the problem and needs of users and the potential of technologies can be linked together in a creative process that challenges both. In competitive strategy literature, this link can be seen in the description put forward by Thompson and Strickland (2003), where they assert that the objective of competitive strategy is to knock the socks off rival companies by doing a significantly better job of providing what buyers are looking for. They further note that competitive strategy deals

exclusively with management's action plan for competing successfully and providing superior value to customers.

Programs of organizational innovation are tightly linked to organizational goals and objectives, to the business plan, and to market competitive positioning. For example, one driver for innovation programs in corporations is to achieve growth objectives. As Davila et al (2006) noted, companies cannot grow through cost reduction and reengineering alone. Innovation is the key element in providing aggressive top-line growth and for increasing bottom-line results.

In general, business organizations spend a significant amount of their turnover on innovation, such as making changes to their established products, processes and services. The amount of investment can vary from as low as a half a percent of turnover for organizations with a low rate of change to anything over twenty percent of turnover for organizations with a high rate of change. The average investment across all types of organizations is four percent. For an organization with a turnover of one billion currency units, this would represent an investment of forty million units. This budget will typically be spread across various functions including marketing, product design, information systems, manufacturing systems and quality assurance. The investment may vary by industry and by market positioning (Chesbrough, 2003).

Across a large number of manufacturing and services organizations found, ranked in decreasing order of popularity, that systematic programs of organizational innovation are most frequently driven by: improved quality, creation of new markets, extension of the product range, reduced labour costs, improved production processes, reduced materials, reduced environmental damage, replacement of products/services, reduced energy consumption and conformance to regulations. These goals vary between improvements to products, processes and services and dispel a popular myth that innovation deals mainly with new product development. Most of the goals could apply to any organization be it a manufacturing facility, marketing firm, hospital or local government. Whether innovation goals are successfully achieved or otherwise depend greatly on the environment prevailing in the firm (Miles, 2004).

### **2.1.2. Value-added Services**

Mobile IN.COM defines mobile value-added services (VAS) as those services that offer differentiation and the ability for mobile operators to charge a premium price.

The IMAI and IMRB report (2006) defines a value-added service (VAS) in the telecommunications industry as a term for non-core services or all services beyond standard voice calls and fax transmissions. The report further clarifies that the value-added services, in this industry, add value to the standard service offering, spurring the subscriber to use their phone more and allowing the operator to drive up their average revenue per user (ARPU).

Value added service provide advantages for the customer and the service provider. Customers have the opportunity to receive something above and beyond their basic needs. Providers benefit from the increased rapport with the client that is likely to translate into a more consisted flow of revenue. These additional customer services often cost the provider little to nothing to provide, yet have the potential to enhance the growth and the reputation of the company significantly.

### **2.1.3. Mobile Service Offerings by Network Operators**

As voice revenue declines, operators are looking at services and application to save the situation. From the ten year old SMS alerts that continue their popularity today, to the very latest in mobile TV and user generated videos, mobile content encompasses a large array of services, which service provider believe would rescue their revenue. The services are a budding sector in the telecommunications (mobile and fixed networks) industry, which was voice centric for many years. Currently voice contributes 86.5 percent of the global mobile revenue service, with data representing just 13.5 percent. The data revenue is predicted to reach 25 percent of the mobile service revenue by 2011 (Hibberd, 2007).

In Kenya the situation is almost the same. Operators` published half year results for 2009 show that data currently accounts for about 10 percent of the mobile revenue, with the remainder coming from voice. The network operators in Kenya strive to be the market leader in offering innovative products to their customers, with an aim of enhancing the customer`s life style and their way of efficiently doing business. As such the operators

have come up with several innovative products and services. Both Safaricom and Airtel categorize their service offerings into personal plans, business solutions, data and messaging, and money transfer.

Naftali Wamburi (2009) looks at the penetration of mobile telephony in everyday economy in Kenya and attributes this partly to the service offerings by network operators. The service he mentions include: Simu ya Jamii (a wireless-phone kiosk by Safaricom); airtime prepaid recharge vouchers of varied denominations; Me2u and Sambaza services that allows subscribers to send airtime to other users by SMS; money transfer business (M-pesa and ZAP) that allows subscribers to send/withdraw money, pay bills; data cards/modems that has increased internet use; news updates via text messages on local and international news, sports scores, horoscopes, movie listings, inspirational quotes via SMS.

## **2.2. Adoption and Use of Services by Consumers**

When a new service is launched or introduced, the entire population does not rush out to buy the service immediately. Webb (2007), states that the service is first adopted by a particular type of individual, the early adopter, and depending on the early adopter's reaction, it may become adopted more widely. He further asserts that the majority will adopt only if the experience of the early adopters is good as they rely on word of mouth, reviews and widespread promotion, included marketing, to convince them that the technology is worthwhile and mature.

Webb (2007) concludes that if the early adopters do not like the product, if the price is not set correctly, if the distribution chains do not champion it, if business intelligence analysis is not done, then the product will fail. He explains that the early adoption stage is the most important in the technology adoption process and takes anything from one year to more than ten years. The majority of the customers adopt a product when they feel enough time has passed for the product to become proven and the price has stabilized. In their paper 'Adoption Factors of mobile Gaming in South Africa' Wyk and Belle (2005) list a number of theoretical models that identify the factors that influence human adoption

behavior. The factors most relevant to the Kenyan scenario include: uses and gratification, domestication, subjective norm, and facilitating conditions.

On uses and gratification, Stanley et al (2005) opine that adopters seek gratification in technology use based on individual needs or motivations. They identify three general gratification; sociability, instrumentality and reassurance. In their study of mobile phone users, these three general gratifications are further broken down to fashion/status, affection/sociability, relaxation, mobility, immediate access, instrumentality and reassurance.

Domestication refers to the adoption of an object into everyday life. Ling (2001) in his study concludes that the importance of using a mobile phone is moving away from the utilitarian value to a very strong social value. Pederson and ling (2003) add that of the domestication studies focusing upon the adoption of mobile services, important findings may be categorized by the contexts of technology and services use. For example differences in adoption and use of mobile services in work and leisure contexts, in different represented by demographic variables such as age (young versus other users) and gender (female versus male users), in contexts of private and public use, and in the dynamic contexts represented by multiple and changing roles of modern technology users.

In their study, lee et al (2009), introduce demographic factors in stimulating the demand for mobile services. They conclude that higher income and a larger user base tend to promote mobile diffusion; that there is a positive relationship between education and new technology adoption due to the fact achieving higher education has a positive association with comfortable with higher technology; that age might be a factor of new technology adoption.

Wyk and Belle (2005) describe the subjective norm as referring to the social pressure that governs people to act within a certain virtual boundary in order to conform to expectations of those people important to them. They note that this aspect is especially relevant to young users of mobile services as far as marketing and advertising of mobile

services are concerned. Adverts are largely focused on the younger market because they are more vulnerable to external influences.

Stanley et al (2005) explains that the adoption rate of any technology product or services is determined by the facilitating conditions. They list the facilitating conditions as referring to price, service availability, awareness, support, security and services would affect the demand for such services, and that prices of non-voice mobile applications may also affect the consumer acceptance and usage of enhanced mobile services.

Availability issues experienced in Kenya revolve around data enabled handset and connectivity. Lee et al (2009) list availability of appealing, diverse mobile applications such as multimedia messaging and mobile internet as likely to contribute to growth in the adoption of service.

On the issue of awareness/knowledge, Al-Hjri and Tatnall (2007), talk about the perceived ease of use` the literature suggests that if technology is perceived to be easy to use then rate of adoption will increase. They list three major issues related to perceived ease of use: easy to navigate, easy to learn, and easy to manage.

Vaughan (2007) opines that services that are simple and focus on what the customers wants, reach the mass market quicker that is the time from early adoption to early majority is short. He gives the example of the successful launch of a mobile banking product (M-PESA) by Safaricom, which reached early majority in less than a year. Within the first the first 3 months (march 2007 to June 2007), 110,000 users registered for the service and registration rate, in June 2007, was at 12,000 users per week. The service is easy to use. A customer selects from a short menu on the mobile phone screen, including "send money" and "withdraw cash". The person receiving the transfer on his or her phone can visit an M-PESA agent to pick up money. In Kenya formal banking is underdeveloped with only 450 bank branches for the whole country. Only 27 percent of the adult population participates in the formal banking system and the journey to the nearest bank branch could take a few hours (Safaricom half year report, 2009). As a result of the banking challenges in the country, the most popular means of transferring money are via a family member or a friend or via a bus company. Internationally, money

transfers are predominantly through formal channels. With M-PESA, a customer's mobile number serves as a bank account number and therefore transferring money is as easy and quick as sending an SMS to another mobile number. It is also less risky compared to sending money via a family member, and it saves time. Simplicity and designing of a service that meets the needs of the target market, is what made M\_PESA very successful.

In explaining the diffusion of innovation, Rogers (2003), identifies five perceived characteristics of an innovation: Sangwon et al (2009), put forward relative advantage as one of the best predictors of the adoption of an innovation. They define relative advantage as the degree to which an innovation is perceived as being better than the idea it supersedes. In other words, relative advantage may mean the amount of improvement the new technology offers compared to the old.

Smothers and France (2007) state that the continued use of a service or product by a consumer will be driven by usability of the product and the amount of value it offers. On usability Rust, Thompson and Hamilton (2006) look at the example of products such as cellular phones and PCs, and the challenges faced by designers of finding a balance between the number of features(capabilities) to be added onto a device and its usability. They assert that the cost of adding a new feature is decreasing, but each extra feature means a consumer has one more thing to learn, one more thing possibly to misunderstand, and one more thing to search through when looking for the things they want. They conclude that an overload of features, also known as 'featuritis' in the software business, detracts from a product's usability. Consumers often become frustrated and dissatisfied with the wide range of features they originally desired and chose.

Looking at the value a product offers to the consumers, smothers and France (2007) state that every new consumer technology product or service begins with a great idea, which usually represents a solution to a consumers problem. Users will only subscribe to a service or try a new product if they believe that they will benefit from it. They further suggest that successful service are those that provide the users with benefits in excess of

the cost after they have started using it, and define cost as the amount of effort or money it takes a user to solve a problem or get to the value.

In addition to cost, users value products or services that have direct personal value the most, followed by entertainment and those valued least are offerings that provide generic information (Smethers and France, 2007). For example, a user ranks a phone call from a spouse or next of kin first because it is of a personal value. The best products are the products that solve direct personal problems.

Cultural factors and economic constrain influences patterns of mobile use in the developing world. In Nigeria the practice of leaving intentional missed-calls or beeping has led to the creation of new mobile uses that reflect and reinforce existing hierarchies, norms and social relations. The intentional missed-calls or beeping ensures that the 'richer guy' pays by returning the call (Donner 2007).

The UNCTAD information and Economy Report 2007-2008, notes that in developing countries, mobile telephony is used to enhance entrepreneurial and market efficiencies. Mobile are use to facilitate or even generate business through checking current market prices for agricultural and other commodities, currency rates, confirm payments, enquire about weather patterns, keep in touch with customers, and stay informed about transport logistics.

### **2.3. Research Gap**

The studies cited above have concentrated on the adoption, usage and impact of the mobile phone on communities in the developing world. The studies have looked at users' awareness of mobile application and their limited grasp of these applications. They have also looked at the phenomenal diffusion of mobile phone in the developing world and how this has changed social/economic interactions. In fact, many researchers are interested in the topics: the function of the market mechanisms underpinning the stunning spread of a new technology across the planet; the mobile as an enabler of broad-based prosperity; the social and cultural implications of the use of mobiles.

Very little research has been done on network operators' service offerings with an aim to establish the basic needs and interest of users of these services. This study would fill this

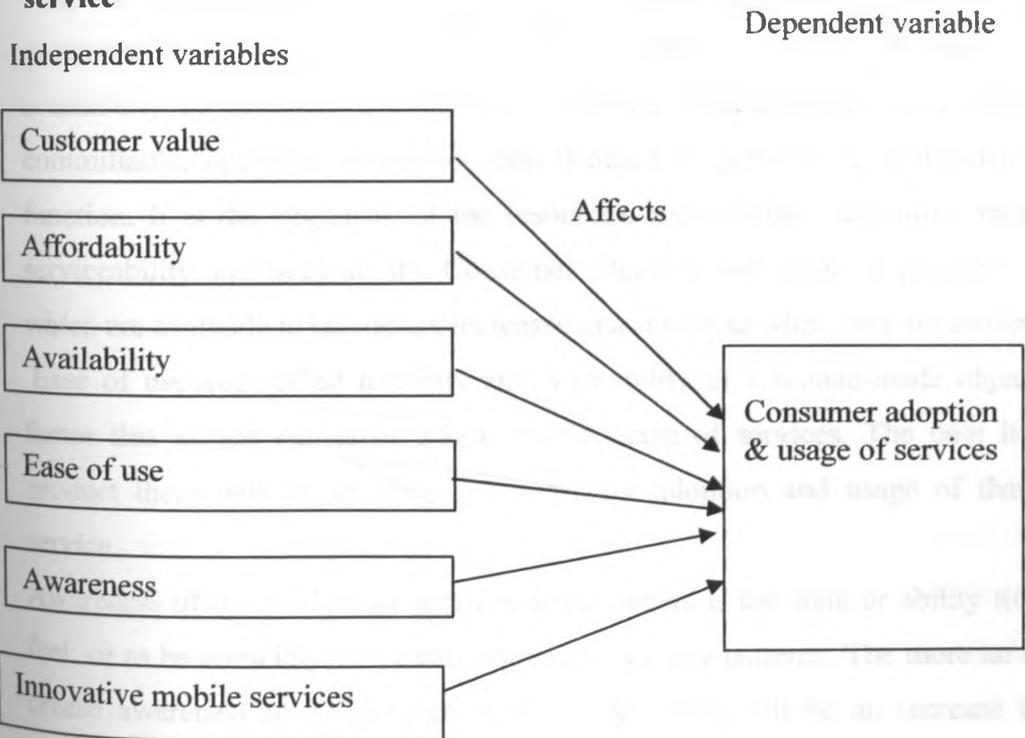
gap by providing information on the factors that influence consumer's decision to adopt and use services by mobile network operators. A research in this area would form a basis upon which to improve existing services and determine new service offerings.

### 2.4. Conceptual Framework

Innovative mobile service propositions are expected to result in a high adoption and usage rate by consumers of the services. For this to happen it is assumed that the services offer value to the customer, are affordable, available, easy to use, and that the customer is aware of the services. Thus, the output which is adoption and use of the services is a function of how well the service meets the needs and expectations of the consumers.

In conceptualizing, the researcher will attempt to point out how the interactions of the innovative mobile services inputs (customers' value, affordability, availability, ease of use and awareness) with consumers of the services may affect the output (adoption and usage of these services). This is best illustrated in Figure 2.4 below.

**Figure 2.4: Factors affecting consumer adoption and usage of innovative mobile service**



Source :( Author, 2011)

A customer value proposition is a business or marketing statement that describes why a customer should buy a product or use a service. It is specifically targeted towards potential customers rather than other constituent groups such as employees, partners or suppliers. It is a clearly defined statement that is designed to convince customers that one particular product or service will add more value or better solve a problem than others in its competitive set. Creating a value is part of business strategy. Strategy is based on a differentiated customer value. Satisfying customers is the source of sustainable value creation. If the products or services of a firm create value to customers the organization will expect consumer adoption and usage of the same product and services to be high. Developing a value is based on a review and analysis of the benefits, costs and value that an organization can deliver to its customers, prospective customers, and other constituent groups within and outside the organization. It is also a positioning of value, where  $\text{Value} = \text{Benefits} - \text{Cost}$  (cost includes risk) (Kaplan & Norton, 2004).

Affordability on the other hand is the conclusion drawn from the analysis of the 'life cycle cost' of a proposed acquisition, that the purchase is in accord with the resources and long term requirements of the acquirer. The more affordable a product or service is consumer adoption and usage of the same will be on the increase. As concerns availability of products and services it is the characteristic of a resource that is committable, operable, or usable upon demand to perform its designated or required function. It is the aggregate of the resource's accessibility, reliability, maintainability, serviceability, and securability. Consumer adoption and usage of products and services which are available to customers increases in as much as when they are available.

Ease of use also called usability and learnability of a human-made object is another factor that affects consumer adoption and usage of services. The ease it is to use a product there will be an increased consumer adoption and usage of that product or service.

Awareness of the product or services to customers is the state or ability to perceive, to feel, or to be conscious of events, objects or sensory patterns. The more an organization crease awareness of its products and services there will be an increase in consumer adoption and usage of services.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1. Research Design**

The research was conducted in the form of a descriptive survey. This is due to the fact that the study was aimed at collecting information from respondents on their attitudes and opinions in relation to mobile services offered by network operators. Descriptive survey is a method of collecting information by interviewing or administering a questionnaire to a sample of individual (Orodho, 2003). It can be used when collecting information about people attitudes, opinions, habits or any of the variety of education or social issues (Orodho and Kombo, 2002). Primarily data collected from such a population is more reliable and up to date.

#### **3.2. Population**

The population of this study consisted of consumers of mobile services living in Nairobi. The population of Nairobi is estimated at 3.5 million (Opiyo, 2009). Fin Access National Survey (June 2009: 19), states that 80.4% of adults (18 years and above) in Nairobi owned a mobile phone. From the above statistics, the study population was estimated at 2.8 million.

#### **3.3. Sample Design**

The study made use of the stratified random sampling technique. This is because the study population was not homogenous as it comprised subscribers from different socio-economic background and from different age group. The goal of this sampling technique was to ensure that these sub-groups (age) within the population were adequately represented in the sample. The target population was divided into five sub-groups. Fifteen respondents were then selected randomly from each sub-group, resulting in a total of seventy five (75) respondents. This represented less than 1% of the population. Mugenda & Mugenda (2003) recommends that the sample size should be at least 10% of the population. However, in this study the percentage was much less due to the very large population.

**Table 3.1: Sample Design**

| Category (Age Group) | Sample Size |
|----------------------|-------------|
| 15-24                | 15          |
| 25-34                | 15          |
| 35-44                | 15          |
| 45-54                | 15          |
| Above 55             | 15          |
| Total                | 75          |

**3.4. Data Collection Method**

The main instrument in data collection was through questionnaires. This because they afford an effective way of collecting information from a large literate sample in a short span of time and at a reduced cost than other methods. The questionnaire made use of both closed and open ended questions. The closed ended questions were used to ensure that the respondents were restricted to certain categories in their responses. Then open ended questions were used where the researcher wished to explore other possible responses that would differ from respondent.

The first section of the questionnaire attempted to obtain general information about the respondent. The second section sought to establish awareness of the respondents to the services offered and how awareness could be enhanced. The third section tried to establish to what extend certain factors affected consumer’s utilization of mobile services. The fourth section looked at the challenges consumers experience when using mobile services and sought to determine whether the respondent had any solution to these challenges.

**3.5. Data Collection Procedures**

A questionnaire pilot test was carried out in December 2009. The pre-test was based on a sample from each group so as to increase the effectiveness of the final questionnaire. The pre-test group was eliminated from the final sample selected. Corrections and suggested improvements arising from this pre-test were incorporated into the questionnaire. The sample for the pre-test was 5 (one from each group).

The questionnaires were personally administered with the help of four research assistants. The use of personally administered questionnaires ensured a high response rate. The respondents were able to ask and seek clarification from the research assistants. This method also gave good control of when the questionnaires would be received from the respondents. It also ensured field work control and editing on site in that any errors were corrected in real time thus reducing the number of spoilt questionnaires. This method ensured a faster and higher response rate.

### **3.6. Data Analysis and Presentation**

Data collected was analyzed by means of statistical package for the Social Sciences (SPSS) and presented through percentages and frequencies. The information is displayed by use of bar charts, pie charts and frequency tables. Data from open-ended questions was analyzed qualitatively. The presentation is in narrative form.

The study used both descriptive and inferential techniques. Descriptive techniques used were frequencies; inferential techniques used were the pear sons' correlation which sought to find out the relation ship between the independent and dependent variables.

## **CHAPTER FOUR**

### **DATA ANALYSIS AND PRESENTATION OF RESULTS**

#### **4.1. Introduction**

This chapter contains an introduction to data analysis, a quantitative and qualitative analysis as well as a summary of the data analysis.

#### **4.2. Data Analysis**

The objective of the research was to assess innovative mobile service offerings: consumer adoption and usage. Seventy five respondents were considered for the study, comprising 100% of the total number of response as per the target population in chapter 3. All the respondents were issued with a questionnaire. Seventy four (74) out of the 75 questionnaires sent out were responded to; one questionnaire was spoilt as the respondent did not fully answer the questions. This constitutes 98.7% of the sample size and formed the basis of data analysis.

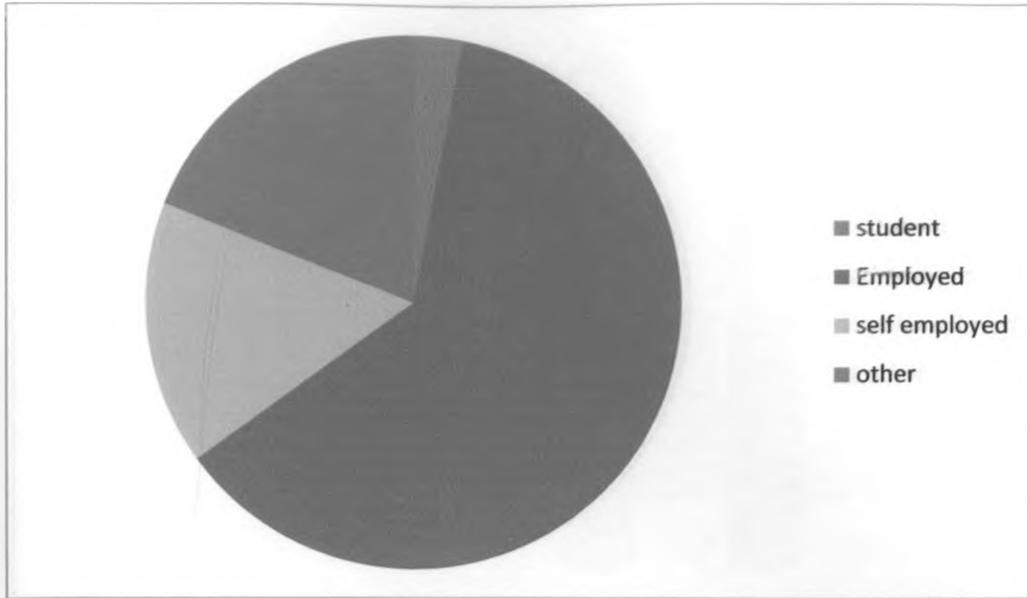
#### **4.3. Quantitative Analysis**

Data was analyzed using descriptive statistics and inferential statistics, which included the simple tallying procedures presented in form of percentages and frequency tables, pie charts, bar graphs and the Pearson correlations. Quantitative analysis was done using Microsoft excel computer package and statistical package for the social sciences (SPSS) software. The above data analysis was preferred as the data collection was in orderly arrays, thus easing tabulation. Descriptive statistics was also useful, as the nature of the problem was specific.

##### **4.3.1. Gender**

A total of 74 valid questionnaires were obtained. With 34 female and 40 male respondents, there is an almost perfect spread in term of gender; though it is unknown whether this is representative of the actual mobile phone user population.

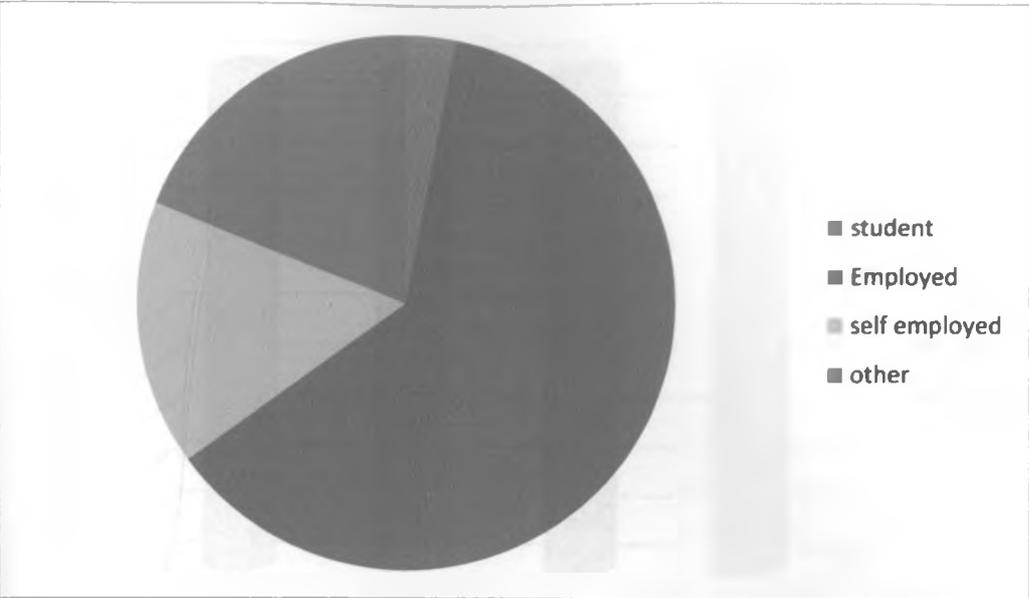
### 4.3.2. Occupation



**Fig 4.2. Respondents Occupation**

Respondents were asked to indicate their occupation. Sixty two percent indicated that they were employed, 19% were student whereas 16% were self employed. The remaining 3% indicated that they belonged in other categories. The category 'other' mainly consisted of housewives. The majority of respondents were employed with 7 being in management position, 16 in lower management, 10 were subordinate staff and 6 did not indicate their role. The responses based on occupation are compared in subsequent questions and the differences commented on.

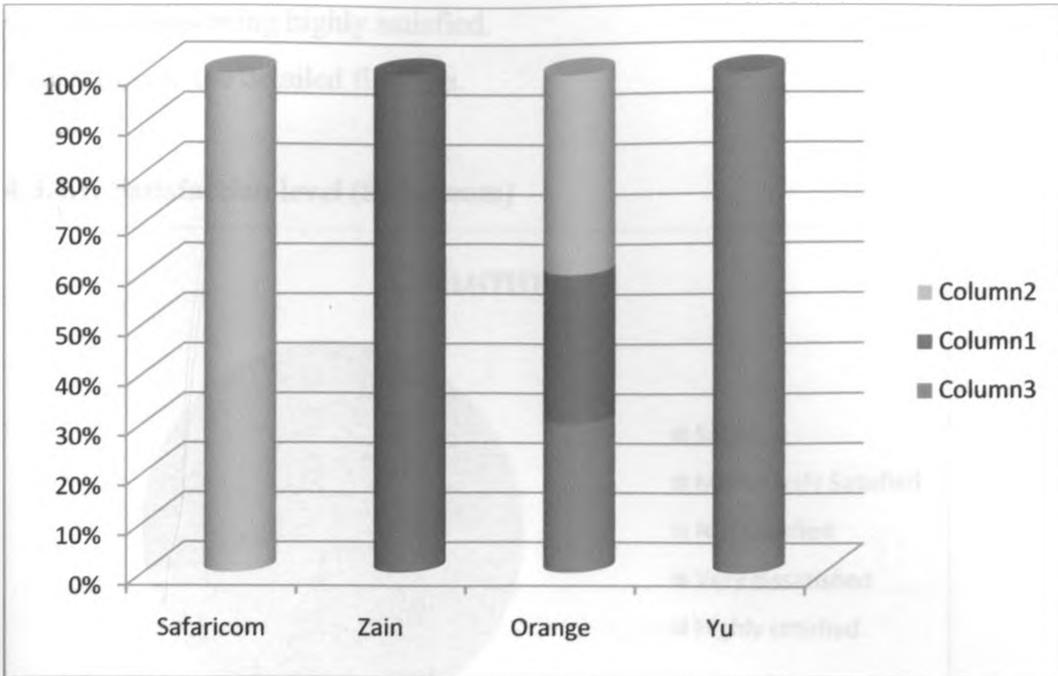
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### 4.3.3. Network



**Fig 4.3. Respondents Service Provider**

Respondents were asked to indicate the mobile service provider they subscribed to. The majority 56 subscribed to Safaricom, 21 Airtel, 10 Orange and 16 the Yu network. Forty six respondents subscribed to one provider only, 23 subscribed to 2 providers, 6 to 3 providers and 2 respondents to all 4 providers.

Safaricom was the most popular network operator among the respondents. The subscriber numbers, to some extent, corresponds to the official subscriber rates, which shows Safaricom as having the largest subscriber base, followed by Airtel. However, the results place Yu above Orange which is different from the national figures that show Orange as having higher subscriber numbers compared to Yu (National Subscriber figures: Safaricom 3.4 million, Airtel 2.4 million, Orange 697,000, Yu 400,000 source: Africa & Middle East Telecom Week, 2009).

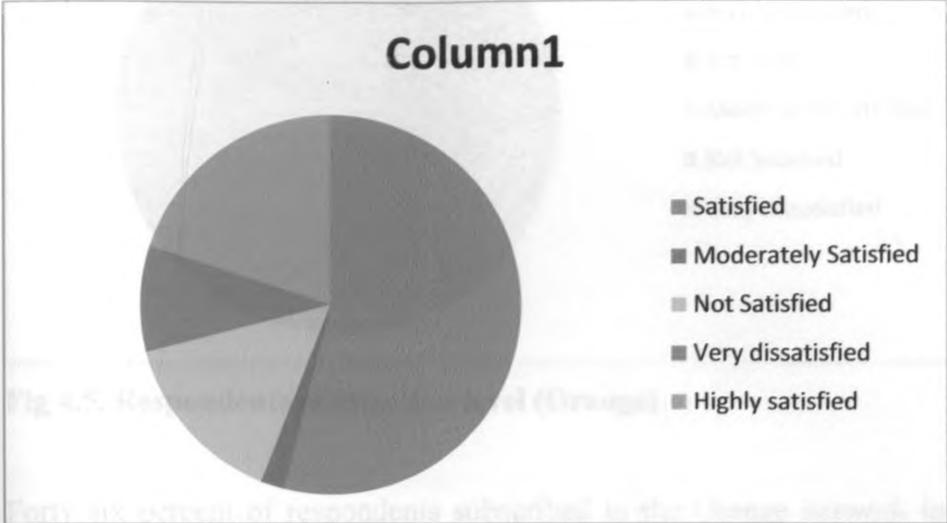
### 4.3.4. Satisfaction Level

Respondents were asked to indicate their satisfaction level with the services provided by their network operator. YU had the highest percentage of satisfied subscribers, with 82%

being highly satisfied. The Orange network had the lowest satisfaction level with 2% of the subscribers being highly satisfied.

Following are the detailed findings.

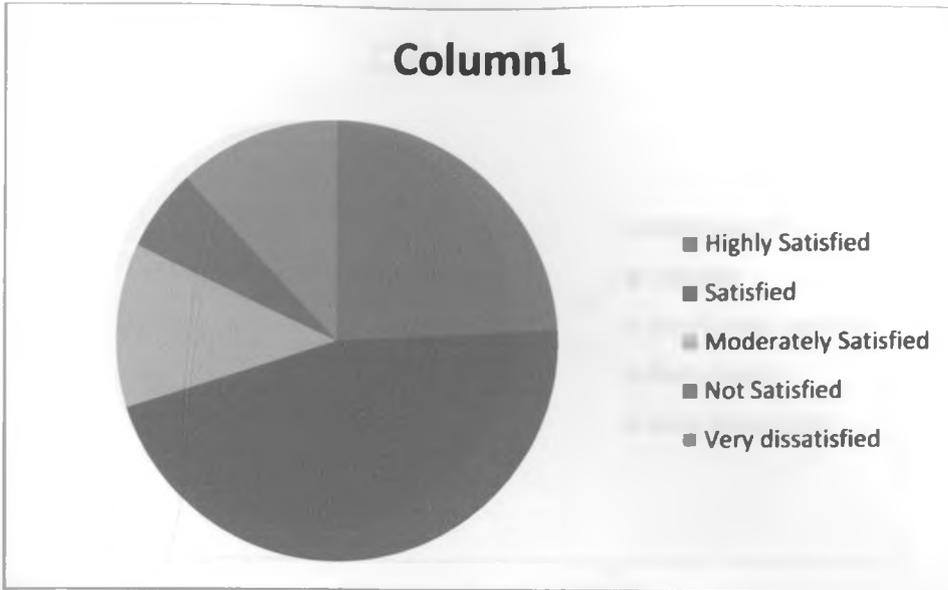
**4.3.4.1. Satisfaction level (Safaricom)**



**Fig 4.4. Respondents satisfaction level (Safaricom)**

This shows that respondents subscribed to Safaricom were generally happy with the services provided as there was a very high percentage (74%) of highly satisfied to satisfied responses. Only a few respondents, 2% were highly dissatisfied with the network provider.

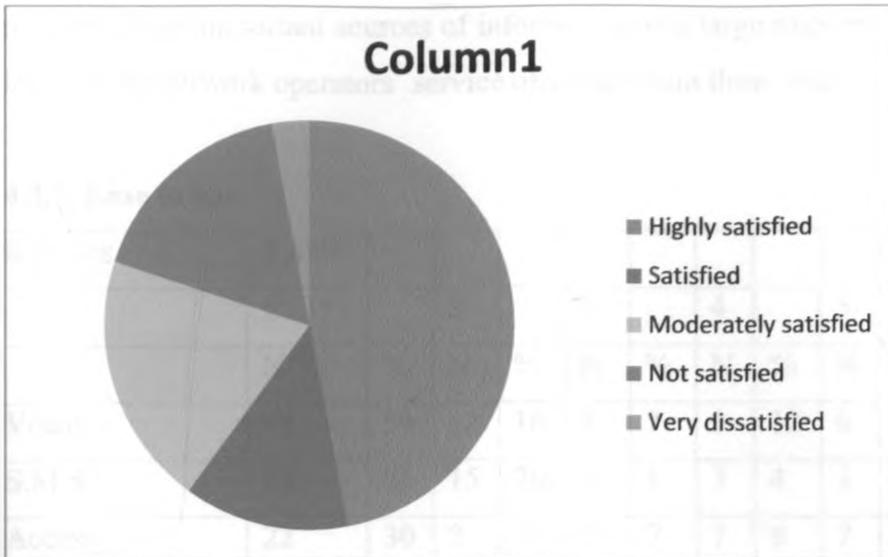
#### 4.3.4.2 Satisfaction level (Orange)



**Fig 4.5. Respondents satisfaction level (Orange)**

Forty six percent of respondents subscribed to the Orange network indicated that they were satisfied, 24% were moderately satisfied, 12% were highly satisfied, 6% not satisfied and 12% were very dissatisfied. Respondents subscribed to the Orange network were on average satisfied with the services provided. However, compared to other network providers, the Orange network had the lowest percentage of satisfied subscribers and the highest percentage of very dissatisfied subscribers.

#### 4.3.4.3 Satisfaction level (Airtel)



**Fig. 4.6. Respondents satisfaction level (Airtel)**

Forty seven percent of respondents subscribed to the Airtel network were satisfied, 13% were moderately satisfied, 20% were highly satisfied, 17% not satisfied and 3% were very dissatisfied. The respondents subscribed to the Airtel network were on average happy with the services provided, putting Airtel in position three, behind YU and Safaricom, in terms of subscriber satisfaction level.

#### 4.3.5. Awareness

From a list of common services offered by network operators, respondents were asked to indicate whether they were aware of the services. Seventy one respondents were aware of the voice service ,59 were aware of the SMS service ,56 money transfer service,47 airtime sharing,43 download ,41 accessing the internet ,40 accessing email and 39 accessing information. This indicates that respondents were most aware of the voice service, while they were least aware of the service accessing information.

#### 4.3.6. Sources of Information

Respondents were asked to indicate the sources from which they got to know about the services offered by their network operators'. Twenty seven percent indicated that they got to learn about the services from the television, 17% radio and 23 % newspapers.

Billboards, brochure and S.M.S had 11% each. This indicates that the television and newspaper are important sources of information as a large majority of respondents got to learn of the network operators' service offerings from these sources of information

**4.3.7. Ease to use**

| Services           | RANK |    |    |    |    |    |   |    |   |    |   |    |   |    |    |   |
|--------------------|------|----|----|----|----|----|---|----|---|----|---|----|---|----|----|---|
|                    | 1    |    | 2  |    | 3  |    | 4 |    | 5 |    | 6 |    | 7 |    | 8  |   |
|                    | N    | %  | N  | %  | N  | %  | N | %  | N | %  | N | %  | N | %  | N  | % |
| Voice              | 44   | 59 | 12 | 16 | 5  | 7  | 9 | 12 | 6 | 8  | 7 | 9  | 6 | 8  | 11 |   |
| S.M.S              | 22   | 30 | 15 | 20 | 1  | 1  | 3 | 4  | 1 | 1  | 2 | 3  | 2 | 3  | 2  |   |
| Access information | 22   | 30 | 2  | 3  | 5  | 7  | 7 | 9  | 7 | 9  | 8 | 11 | 8 | 11 | 11 |   |
| Downloads          | 6    | 8  | 5  | 7  | 3  | 4  | 6 | 8  | 6 | 3  | 9 | 12 | 9 | 12 | 13 |   |
| Internet           | 7    | 9  | 6  | 8  | 5  | 7  | 9 | 12 | 2 | 8  | 3 | 4  | 3 | 4  | 4  |   |
| Email              | 17   | 23 | 8  | 11 | 9  | 12 | 4 | 5  | 6 | 5  | 4 | 5  | 4 | 5  | 6  |   |
| Money transfer     | 13   | 18 | 4  | 5  | 11 | 15 | 6 | 8  | 9 | 12 | 3 | 4  | 3 | 4  | 4  |   |
| Airtime sharing    | 12   | 16 | 5  | 7  | 4  | 7  | 5 | 7  | 3 | 4  | 7 | 9  | 7 | 9  | 11 |   |

**Table 4.1. Ease to use**

N-Number of respondents

From a list of the common services offered by operators ,the respondents were asked to rank them in order of their ease of use ,with ranking order one (1) being very easy to use and eight hard to use. Voice was rated the easiest to use with 59% of the respondents selecting it as the easiest service to use S.M.S and information updates were also rated very easy to use at 30% each. The service rated hardest to use was downloads at 18% of respondents.

### 4.3.8. Affordability

| Services           | Affordability   |    |            |    |                       |    |                |   |            |    |
|--------------------|-----------------|----|------------|----|-----------------------|----|----------------|---|------------|----|
|                    | Very affordable |    | Affordable |    | Moderately affordable |    | Not affordable |   | No comment |    |
|                    | N               | %  | N          | %  | N                     | %  | N              | % | N          | %  |
| Voice              | 7               | 9  | 7          | 9  | 9                     | 12 | 4              | 5 | 19         | 26 |
| S.M.S              | 15              | 29 | 16         | 22 | 9                     | 12 | 2              | 3 | 5          | 7  |
| Access information | 3               | 4  | 5          | 7  | 6                     | 8  | 6              | 8 | 26         | 35 |
| Download           | 3               | 4  | 7          | 9  | 9                     | 12 | 7              | 9 | 20         | 27 |
| Internet           | 4               | 5  | 13         | 18 | 7                     | 9  | 4              | 5 | 18         | 24 |
| e-mail             | 4               | 5  | 7          | 9  | 8                     | 11 | 3              | 4 | 24         | 32 |
| Money Transfer     | 9               | 12 | 11         | 15 | 11                    | 15 | 1              | 1 | 14         | 15 |
| Airtime Sharing    | 14              | 19 | 12         | 16 | 4                     | 5  | 1              | 1 | 14         | 19 |

**Table 4.2. Affordability of services**

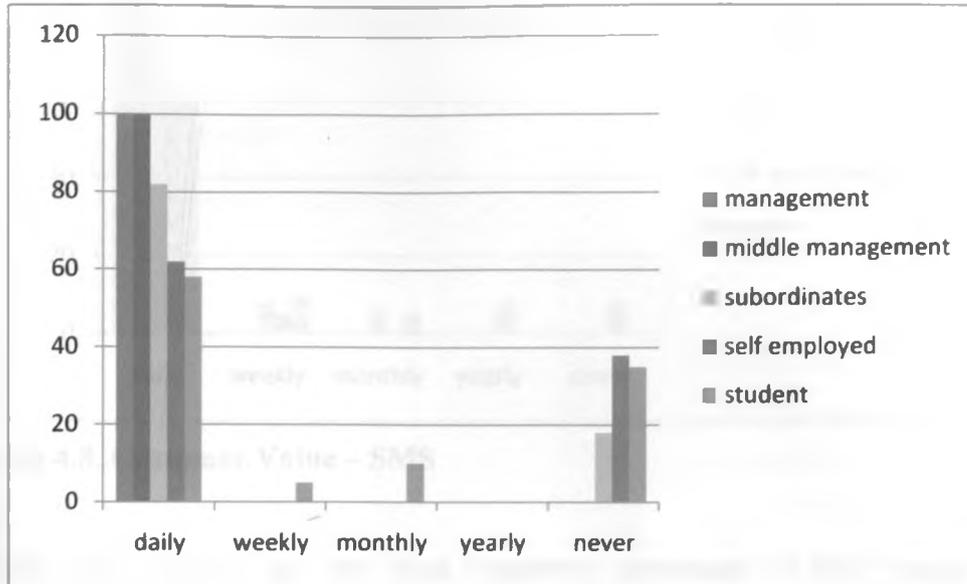
Respondents were asked to rate the affordability of the services offered by their service providers from very affordable to not affordable. S.M.S and airtime sharing were rated most affordable at 20% and 19% respectively. The least affordable services were downloads (9%) and information updates (8%).

### 4.3.9. Customer Value

The value respondents place on each service was determined by the frequency with which they used the service. A test was carried out on each of the services to ascertain whether any usage category was selected more often than the others. The results for the whole sample show that the category "daily" was selected significantly more often for voice, SMS, accessing internet and email, which makes these the most frequently used services by respondents. This was followed by money transfer with "monthly" being the usage category that was selected more often. The least used services were downloads and accessing information for which "never" was the usage frequency selected by a significant number of respondents.

Further analysis on customer value was done to determine value on each service by occupation of respondents.

#### 4.3.9.1 Voice

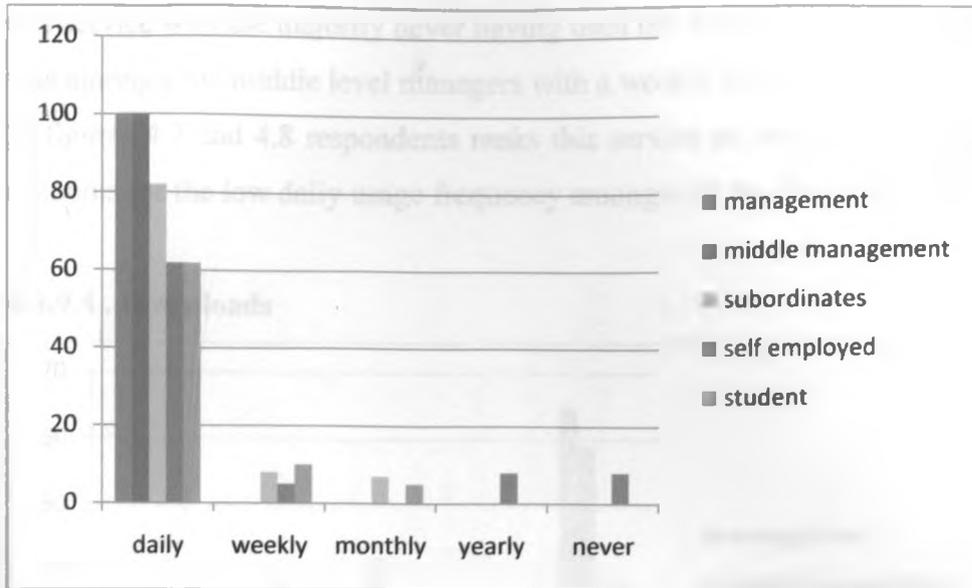


**Fig. 4.7. Respondents Voice**

Upper management and middle management level employees use the voice service on a daily basis. Eighty percent of subordinates use the voice service daily while 20% of subordinates never use the voice service. The self employed have the highest percentage of those who never use the voice service at 38% followed closely by students at 36%.

These results can be explained by the fact that most respondents find this service to be expensive. In chart 4.11 above, only 10% of the respondents found this service affordable. Employees in upper and middle level management have higher incomes and are therefore able to spend more on the voice service, thereby having a high frequency of daily usage. Students having the lowest income have the least daily usage frequency.

### 4.3.9.2 Customer Value-SMS

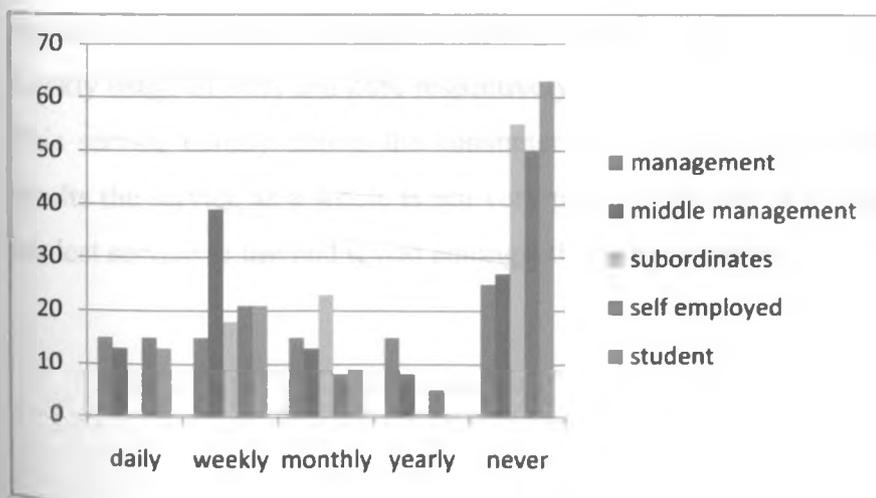


**Fig 4.8. Customer Value – SMS**

The SMS Service has very high frequency percentage of daily usage. One hundred percent of higher and middle management use the SMS service. All other categories recorded a high daily usage at above 75%.

The high usage frequency of the SMS can be attributed to the fact that respondents rated this service the most affordable (see chart 4.8 above).

### 4.3.9.3 Information Updates

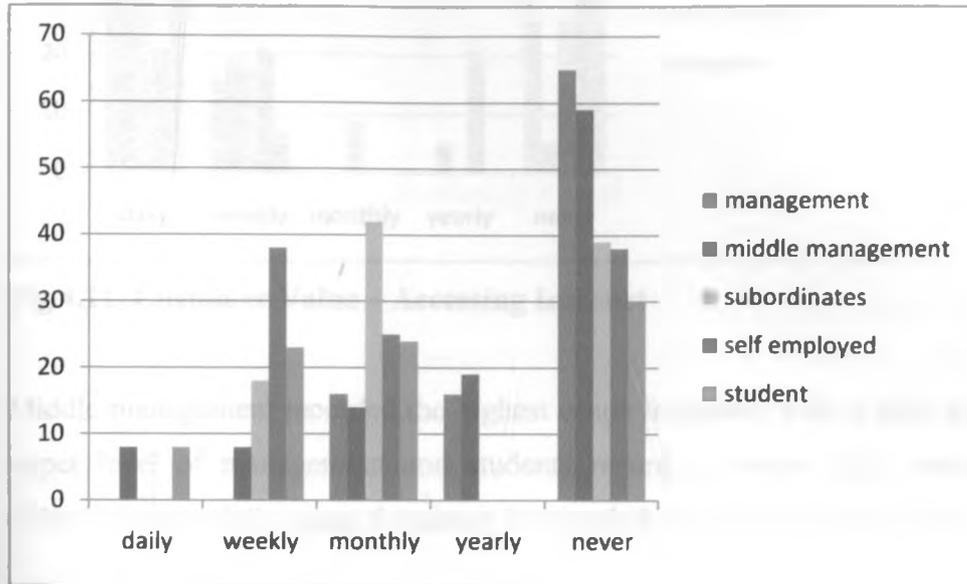


**Fig.4.9. Customer Value-Information Updates**

The respondents do not value this service. Most of the staff recorded very low usage of this service with the majority never having used the service. The highest frequency of use was amongst the middle level managers with a weekly usage of 38%.

In figures 4.7 and 4.8 respondents ranks this service as hard to use and expensive. This accounts for the low daily usage frequency amongst all the five categories.

#### 4.3.9.4 . Downloads

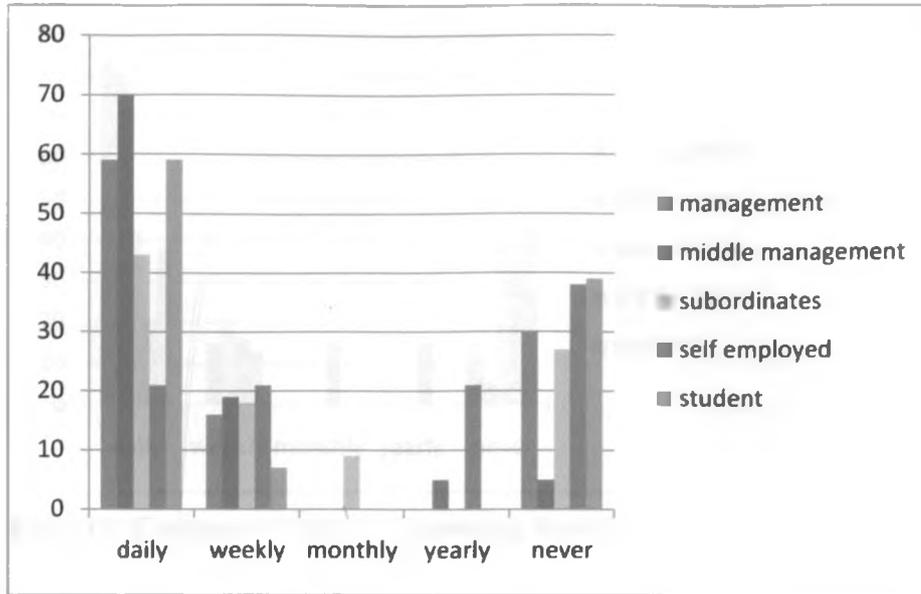


**Fig 4.10. Customer Value - Downloads**

The usage frequency of downloads by upper was very low, with 66% never having used the service. The service is mostly used by the self employed and students who recorded a weekly usage of 36% and 28% respectively.

This service mainly allows the consumer to download ringtones and music. From the results the service as a whole is not very popular. In table 4.1 respondents rated it as the hardest service to use and it was amongst the most expensive.

### 4.3.9.5 Accessing Internet

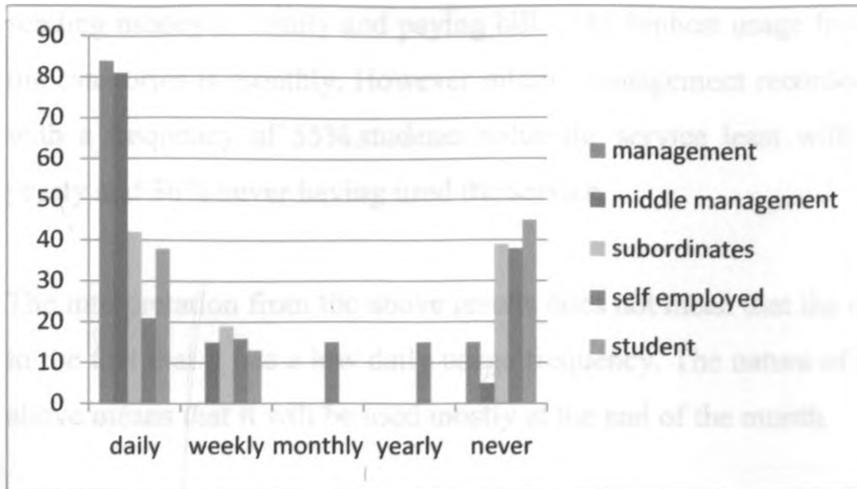


**Fig 4.11. Customer Value – Accessing Internet**

Middle management recorded the highest usage frequency with a daily usage of 70%.the upper level of management and students record a similar daily usage frequency of 58%.the lowest daily usage frequency is recorded by self employed at 21%.

The usage of this service is affected by its affordability and it availability on the consumers handset. To have this service, the consumer needs and internet enabled handset which is costly. The service is popular amongst the students due to the fact that they are mostly using it to keep updated on the social networking site face book.

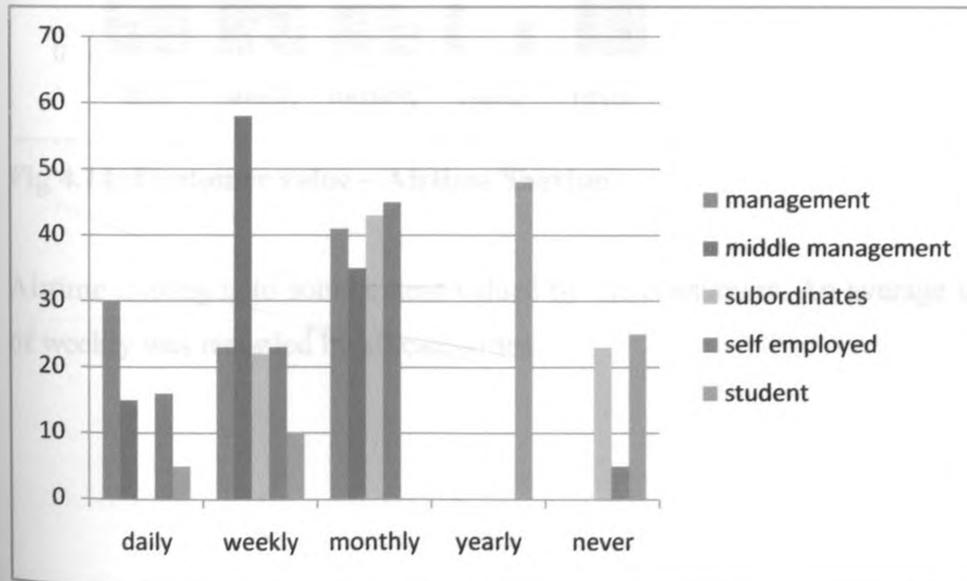
#### 4.3.9.6 Accessing Email



**Fig 4.12. Customer Value – Accessing Email**

This service is mostly valued by upper and middle level management with a daily usage frequency of 85% and 81% respectively. The service is not very popular among students with 52% never having used the service. The popularity of the service amongst the upper and middle level management can be explained by fact that it enables them to read and respond to the official emails via their mobile phones even when not in the office.

#### 4.3.9.7 Money Transfer

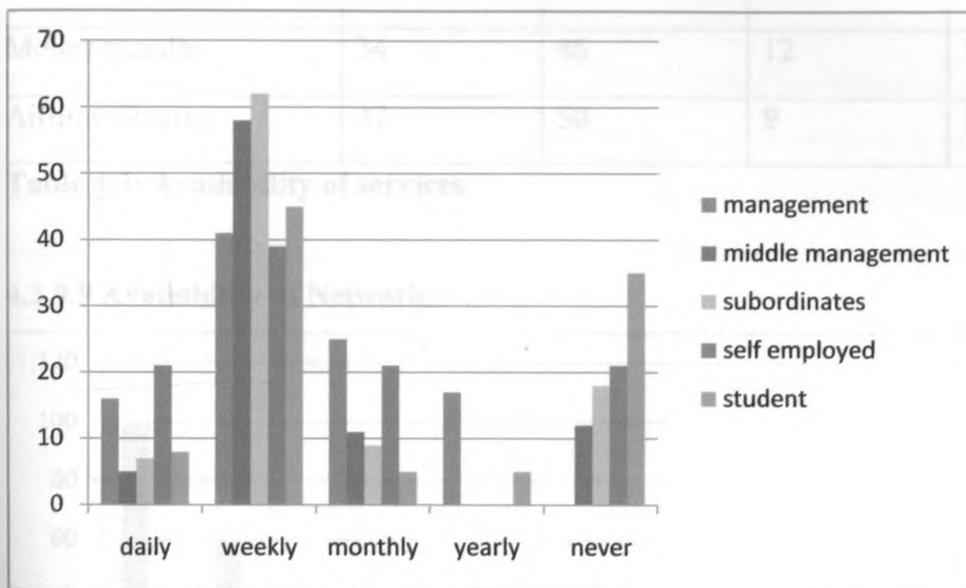


**Fig 4.13: Customer Value – Money Transfer**

Money transfer is a service that is mostly used at the end of the month for the purposes of sending money to family and paying bills. The highest usage frequency amongst most of the categories is monthly. However middle management recorded a higher weekly usage with a frequency of 55%.students value the service least with 48% using the service yearly and 36% never having used the service.

The interpretation from the above results does not mean that the service is not valued due to the fact that it has a low daily usage frequency. The nature of the service as explained above means that it will be used mostly at the end of the month.

#### 4.3.9.8 Airtime Sharing



**Fig 4.14: Customer value – Airtime Sharing**

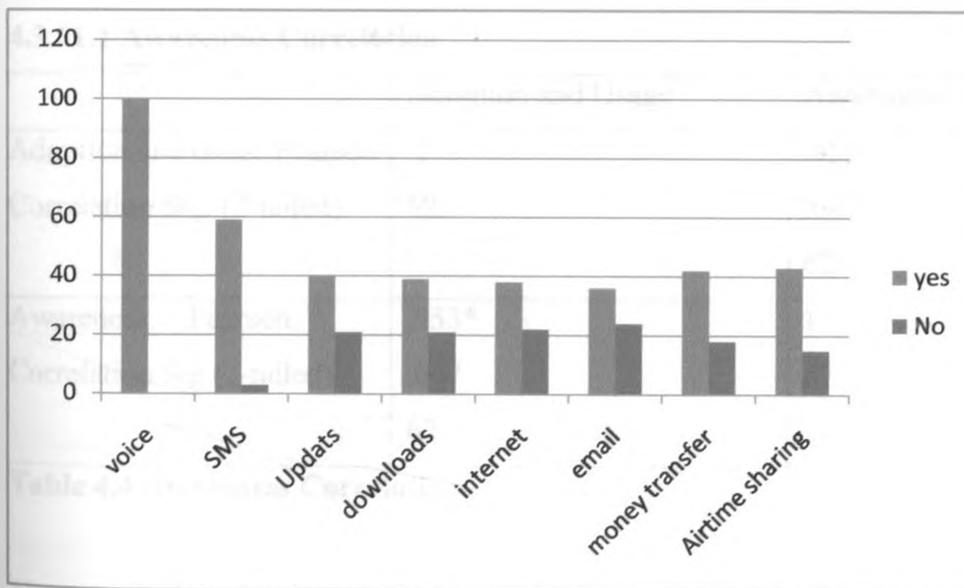
Airtime sharing is to some extent valued by the consumers. An average usage frequency of weekly was recorded by all categories.

### 4.3.10 Availability

| Services            | Availability |            |           |            |
|---------------------|--------------|------------|-----------|------------|
|                     | Yes          |            | No        |            |
|                     | Frequency    | Percentage | Frequency | Percentage |
| Voice               | 74           | 100        | 0         | 0          |
| SMS                 | 44           | 59         | 2         | 3          |
| Information updates | 29           | 39         | 18        | 24         |
| Download            | 28           | 38         | 18        | 24         |
| Internet            | 27           | 36         | 19        | 26         |
| Email               | 24           | 32         | 21        | 28         |
| Money transfer      | 34           | 46         | 12        | 16         |
| Airtime Sharing     | 37           | 50         | 9         | 12         |

**Table 4.3: Availability of services**

### 4.3.9.9 Availability of Networks



**Fig 4.15: Availability**

Usage of services offered by network operators is also determined by the type of phone the consumer has. Respondents were asked whether the services offered were available in their mobile phones. All the respondents [100%] were able to access the voice service on their hand sets. Information updates, downloads, internet and email were the least available services. The latter services require that the handset be internet enabled. These handsets are costly; this accounts for the low availability rating of these services by respondents.

### 4.3.11 Correlations

Correlation is one of the most common and useful statistics. A correlation is a single number that describes the degree of relationship between variables. The main result of a correlation is called the correlation co-efficient [or “r”] it ranges from -1.0 to +1.0. The closer r is to +1 or -1, the more closely the two variables are related .if r is close to 0 it means there is no relationship between the variables. If r is positive, it means that as one variable gets large the other gets larger. If r is negative it means that as one gets larger, the other gets smaller [often called an “inverse “correlation].

#### 4.3.11.1 Awareness Correlation

|                             | Adoption and Usage | Awareness |
|-----------------------------|--------------------|-----------|
| Adoption and usage Pearson  | 1                  | .953*     |
| Correlation Sig. (2-tailed) | .62                | .047      |
| N                           |                    | 62        |
| Awareness Pearson           | .953*              | 1         |
| Correlation Sig.(2-tailed)  | .047               | .62       |
| N                           | 62                 |           |

**Table 4.4 Awareness Correlation**

The correlation between adoption and usage and awareness is +0.953 and has a significance of 0.47 this is a very strong correlation. This indicates that most respondents are aware of the services offered by their mobile service providers.

#### 4.3.12.2 Ease of Use Correlation

|                             | Adoption and Usage | Awareness |
|-----------------------------|--------------------|-----------|
| Adoption and usage Pearson  | 1                  | .540      |
| Correlation Sig. (2-tailed) | 46                 | .049      |
| N                           |                    | 46        |
| Ease of use Pearson         | .540               | 1         |
| Correlation Sig.(2-tailed)  | .049               | 46        |
| N                           | 46                 |           |

**Table 4.5 Ease of Use Correlation**

The correlation between adoption and usage and ease of use is +0.540 and has a significance of 0.49 this is an average correlation. This indicates that half number of respondents found services offered hard to use.

#### 4.3.11.3 Value Correlation

|                             | Adoption and Usage | Awareness |
|-----------------------------|--------------------|-----------|
| Adoption and usage Pearson  | 1                  | .303      |
| Correlation Sig. (2-tailed) | 57                 | .040      |
| N                           |                    | 57        |
| Value Pearson Correlation   | .303               | 1         |
| Sig.(2-tailed)              | .040               | 57        |
| N                           | 57                 |           |

**Table 4.6 Value Correlation**

The correlation between adoption and usage and value is +0.303 and has significance of 0.40 this is a weak correlation. This indicates that most of the respondents do not value the services offered by their network provider.

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#### 4.3.11.4. Availability Correlation

|                             | Adoption and Usage | Awareness |
|-----------------------------|--------------------|-----------|
| Adoption and usage Pearson  | 1                  | .952*     |
| Correlation Sig. (2-tailed) | 46                 | .012      |
| N                           |                    | 46        |
| Availability Pearson        | .952*              | 1         |
| Correlation Sig.(2-tailed)  | .012               | 46        |
| N                           | 46                 |           |

**Table 4.7: Availability Correlation**

The correlations between adoption and usage and availability is +0.952 and has a significance of 0.12 this is a very strong correlation. This indicates that most of the people have these services in their phones thus they can easily access them.

#### 4.3.11.5. Affordability Correlation

|                             | Adoption and Usage | Awareness |
|-----------------------------|--------------------|-----------|
| Adoption and usage Pearson  | 1                  | -.774     |
| Correlation Sig. (2-tailed) | 55                 | .004      |
| N                           |                    | 55        |
| Affordability Pearson       | -.774              | 1         |
| Correlation Sig.(2-tailed)  | .004               | 55        |
| N                           | 55                 |           |

**Table 4.8 Affordability Correlation**

The correlation between adoption and usage and affordability is -0.774 and has a significance of 0.04 this is a negative strong correlation. This indicates that as the services become more unaffordable, most people cease from using them.

## **4.4. Qualitative Analysis**

### **4.4.1. Awareness**

A number of sources of information were listed in the questionnaire from which respondents` selected how they got to know about services offered by service providers. Respondents were then asked to list other sources of information not mentioned.

Other sources included promotions organized by network operators, posters, word of mouth, magazines, help facility in the mobile phone and internet.

On other ways that network operators` can enhance awareness of services ,most suggestions put forward included providers sponsoring events ,sending SMS alerts and having sales promotions. These are already happening. Two respondents suggested enhancing awareness in rural areas through communication targeting the rural population being in their mother tongue. This too is happening to some extent as a number of the service providers are using the vernacular FM radio stations to advertise their services.

### **4.4.2. Challenges**

Respondents were asked to indicate some of the challenges they experienced when using services by their network providers.

#### **4.4.2.1. Voice**

Challenges faced by respondents when using the voice service can be placed under two categories, namely cost and poor service delivery. Respondents were challenged by the high cost of airtime. On poor service delivery, they listed congested network especially when there is a price offering, on Fridays and during public holidays. They also listed no clear network brought about by noise in the background .Many respondents were frustrated by frequent sudden call disconnection, calls going to the wrong number, calls hanging and connection errors.

#### **4.4.2.2. SMS**

Respondents complained about the slowness of the SMS service resulting delays in transmitting message, and in some cases the message was not delivered to the recipient. They also felt that the service was time consuming as it takes a lot of time to write a

message. The respondents were also unhappy with the inability to recall SMS if sent to unintended recipient.

#### **4.4.2.3 Information Updates**

Information updates were reported as being extremely expensive. Respondents were dissatisfied by the fact that local updates were few and the content shallow. Another challenge faced was the inability to control the frequency of updates and the fact that once subscribed to the service one cannot choose the type of information that they would like to be updated on. Respondents found it difficult to deactivate the service.

#### **4.4.2.4 Downloads (Music, ring tones)**

Respondents found the service expensive. They felt that when downloading, they were vulnerable to virus infections. Network instability made it difficult to download/complete downloads as network dropped.

#### **4.4.2.5 Accessing Internet /Accessing Email**

Responses to the two services were put together as the issues raised were the same for both. High charges were one of the most listed challenges by respondents for the two services. Other challenges listed included delays by service provider in sending internet setting, too many setup steps, time taken to download startup package too long, and vulnerability to virus infection, slow network speeds and frequent downtimes, problems in connectivity during peak hours and connection errors.

#### **4.4.2.6 Money Transfer**

Respondents were dissatisfied with the frequent network downtime. They also felt that the service was expensive, and were especially unhappy by the fact that there was a charge for checking account balance. Agents lacking float was a major problem. With Mpesa service, respondents complained about the possibility of sending money to the wrong person precipitated by the fact that one had to type in the recipient's number as opposed to the ZAP practice of selecting recipient from the contact list. Heavy congestion

at the end of the month was also cited. Respondents were also unhappy by the fact that the service does not work across networks.

#### **4.4.2.7 Airtime Sharing**

The biggest challenge experienced by respondents when using this service was the complex setup process. They cited unstable network and the problem of not being able to share airtime across networks. Another challenge was the long code that had to be typed in when sending airtime. Respondents also felt that the minimum amount that one can send was too high at KES 50.

#### **4.4.3. Suggestions**

Respondents gave a number of suggestions that they felt could solve some of the challenges listed above. On the issue of network congestion and instability, they suggested having more data/call centers to curb network congestion, avoiding offers that lead to congestion/network failure, and upgrading systems to avoid congestion. To curb virus infection risk when downloading content, they suggested information to be downloaded. On the issue of high cost of services, they recommended lower call billing rates and introduction of uniform pricing across all networks, enabling cheap cross transfers between networks, for example in money transfers and airtime sharing. Consumers would be encouraged to use email/internet services if the browsing costs were lowered. For money transfers they suggested cutting cost to consumers by retaining only the sending charges and ensuring that receiving is free.

On money transfer service, respondent felt that the possibility of transferring money to the wrong recipient when using Mpesa could be eliminated by enabling the recipient's name to be picked from contact list instead of having to type in the phone number. On the issue of customer care, a number of suggestions were put forward including making customer care accessible by decongesting lines, having highly competent staff at customer care centers to ensure that queries are speedily handled. Respondents suggested the use of road shows to expand outreach and carrying out consumer research to address the needs of low income earners.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1. Summary**

Looking at the data collected from this study, it is clear that opportunities abound in the space of service provision in the mobile network operator industry. In order to fully exploit the opportunities it is important to understand which factors will influence a consumer's behavior towards adopting a product or service. This research investigated the potential reasons for an individual's behavior towards use and intention to use mobile services.

The study showed that forty six percent of the total populations were female respondents while the remaining 54% were male. Sixty two percent of the respondents indicated that they were employed, 19% were students whereas 16% were self employed the remaining 3% indicated that they belonged in other categories.

Fifty six respondents were subscribed to Safaricom, 21 to Zain, 10 to Orange and 16 to Yu network. Respondents subscribed to Yu were the most satisfied with their service provider with 82% indicating that they were highly satisfied. Only 9% were dissatisfied with their service provider. Orange had the largest percentage of dissatisfied consumers, with 12% of the respondents indicating that they were highly dissatisfied. The high rating given to Yu network was mainly attributed to their having the lowest calling/S.M.S rates as compared to the other service providers. This reinforces the fact that affordability is a major consideration when choosing a service provider.

##### **5.1.1. Awareness**

The correlations between adoption and usage and awareness was +0.953 and had a significance of 0.47 this was a very strong correlation. This indicated that most of the respondents were aware of the services offered by their mobile service providers.

The services that respondents were most aware of were voice, SMS and money transfer. Respondents were least aware of accessing internet, email and information updates.

Twenty seven percent of the respondents got to know about services offered by their provider from the television, 23% from newspaper and 17% from radio. Billboards and brochures scored 11% each. This implies that the television, newspaper and radio have a wide reach and are important medium through which information can be disseminated.

### **5.1.2. Ease of Use**

The correlation between adoption and usage and ease of use was +0.540 and had a significance of 0.49 this is an average correlation. This indicates that half of the respondents have difficulties in using services offered by their providers.

Voice was rated the easiest to use. SMS and information updates were rated moderately easy to use. The services, rated most difficult to use were accessing internet and downloads. This can be seen from the complicated setup process (to use these services, consumers have to setup internet connection which has 17 steps).

### **5.1.3. Affordability**

SMS was rated the most affordable service at 20%, followed by airtime sharing at 19% and money transfer at 9%. This can be seen in table 4.2, page 30. The least affordable services were accessing internet and email, information updates and downloads which were scored between 5% and 4%. The least affordable services require internet connectivity in order to be used and are billed based on bytes downloaded. Internet costs are still very high in Kenya and this is exacerbated by the low download speeds.

### **5.1.4. Value**

The correlations between adoption and usage and value was +0.303 and has a significance of 0.40 this is a weak correlation. This indicates that most of the people don't value the services offered by their network provider.

Respondents were asked to indicate which service they valued most this was ascertained by the frequency with which they used the service.

As indicated in table 4.3, the most important services to the respondents were basic SMS and voice service. This was followed by accessing email and internet. Already voice and SMS had reached the mass market, while email and internet is still in the early adoption stages of development. The internet service is used mainly by the youth for social networking (face book), but with the potential to reach the mass market too. Upper and mid level managers use the email service most. This is due to the fact that they find the service useful as a mobile office, that is, they can access their official email even when away from the office.

The least ranked services in order of usage frequency were information updates, airtime sharing, money transfer and downloads. A substantial percentage, 76% of the respondents, had never downloaded content. This could be due to the fact that respondents find this service to be unaffordable and hard to use (table 4.1, pg 28 & table 4.2 pg 30). However, the low usage frequency of money transfer does not necessarily mean that it is not valued. On the contrary based on the number of consumers subscribed to this service (7.9 million - Mpesa, ZAP figures not available), the service is very valued. Most subscribers will use the service at the end of the month to send money to relatives and to pay bills.

#### **5.1.5. Availability**

The correlations between adoption and usage and availability was +0.952 and had a significance of 0.12 this is a very strong correlation. This indicates that most of the respondents have these services in their phones thus they can easily access them.

Respondents were asked whether they could access services offered by their network provider on their mobile phones. Information updates, downloads, accessing internet and accessing email had the lowest availability percentages. To access these services the consumers' mobile handset should be internet enabled. Phones having this feature are comparatively more costly. An average of 34% of respondents own phones with very basic features that are not internet enabled.

### 5.1.6. Summary by Service

The most valued service in ranking order based on usage frequency, was the SMS - its calculated average usage frequency was daily (77%). Though respondents' felt that the service was not easy to use, they ranked it the most affordable service which accounts for its popularity.

Voice came second to SMS in terms of value, with usage averaging between daily 58% and never (30%). This may be explained by the fact that respondents rated the service as the easiest to use and at the same time as being among the most unaffordable services.

Accessing internet and email had very interesting ratings. Awareness of the two services was relatively low at 41% and 40% respectively. An average of 34% of respondents did not have internet enabled handsets. Though ranked as being hard to use and very unaffordable, the two services ranked quite high in value after SMS and voice. The usage frequency for both averaged daily (35%) to never (32% for internet and 22% for email). Respondents who had never used the service were also not aware of its existence. This implies that service providers could increase adoption and usage of these services by making them more affordable and easy to use.

Information updates was ranked the lowest in terms of awareness 39%. Respondents also ranked it as the most expensive service. Value for this service is low at 14%, with an average usage frequency of never. Respondents felt that once activated they did not have control over the updates that were sent via SMS and the frequency to which these updates were sent. The charges per update are also higher than the normal SMS charge at 15 shillings per update compared to an average of 4 shillings per SMS.

The result on money transfer was not conclusive. The service received low ratings in terms of value - with an average usage frequency of monthly. Most consumers will use the money transfer service at the end of the month to pay bills and send money to relatives in the rural areas. Respondents also rated the service as hard to use and unaffordable. Airtime sharing is among services given a low rating in terms of value. Most respondents were unaware of the service, found it hard to use and unaffordable.

The least valued service is downloads, with an average usage frequency of never (76%). Most respondents were unaware of the service and those who used it found it to be the hardest to use and the most unaffordable.

#### **5.1.7. Users' perception**

Users' perception on the services provided by their network operators was based on the results of the open ended questions. Respondents were aware of the services. However, they indicated that awareness creation is currently through above the line marketing campaigns. They suggested that service providers should consider below the line educational campaigns that are oriented around specific uses of various services, for example, road shows, experiential promotions, and the use of promoters in retail outlets. Respondents listed a number of challenges they faced when using services provided by their network operators. Pricing was perhaps the item on most respondents' minds, for all services provided respondents listed high costs as a major challenge faced when using the services.

Another challenge listed by respondents was complicated setup process for data services. The respondents prefer services that are easy and quick to use and suggested having a helpful, well trained and easily accessible customer service to help solve problems faced when using services. Respondents reiterated the importance of customer care especially as more new services are introduced into the market.

Poor network quality came up strongly in the open ended question and was listed by a large number of respondents as one of the big challenges face when using services. The solution would be for operators to invest more on improving the network quality. This would be money well spent because it would make customers happy.

#### **5.2. Conclusions**

The premise of this research was that improving the variables of awareness, affordability, Ease of use, value and availability of mobile services would lead to increased adoption and usage of these services by consumers. From the results obtained from the analysis above several conclusions can be made.

A strong positive correlation between awareness and usage indicates that most of the people are aware of the services offered by their mobile service providers. Awareness of the services does not necessarily translate to subscribers' using the services.

From the correlation between ease of use and adoption and usage it can be concluded that a substantial number of respondents find services offered difficult to use thus the network providers should take time to educate their customers on how to use some of the services they offer. This raises the importance of having an accessible customer service. Most of the services that are being offered by mobile providers are available in consumers' handsets thus availability is not the major contributor to the non adoption of these services.

Affordability is a major issue of concern. Most of the respondents complained of the calling rates across other networks as very expensive and also the cost of accessing internet and email. They also complained about the costs incurred when sending and receiving money via the money transfer services.

However, consumers' will use a service as long as they consider it to be of high value to them, even though the service might be expensive or hard to use. This is evidenced from the fact that respondents ranked accessing internet and email highly, despite the fact that they also felt that these services were expensive and complicated to use. Opportunities abound here for the service provider considering that most consumers will access the internet for the first time through their mobile phone.

### **5.3. Recommendations on policy issues**

The highest ranked services, in terms of value, are also the most used by the respondents and the lowest ranked are the least used (as shown in Table 4.3, page 31). The concern with lowest ranked services is that, the majority of respondents had never used most of them before. It is possible that the significant percentage of respondents, who had never used services such as accessing the internet and accessing email (32% & 22% respectively), are not aware of their existence. The service provider should market these services more and promote them, in order to create awareness and increase usage. This

solution could increase the usage of a useful service like accessing the internet from a cell phone, if end users are aware of it.

In order to increase awareness, network providers should consider below the line educational campaigns that are oriented around specific uses of various services, for example, road shows, experiential promotions, and the use of promoters in retail outlets. Calls to the customer care call centers are likely to increase, as more new services are added to the existing ones. To minimize enquiries about new services, service providers should design products that are easy to use. As shown in the previous chapter, respondents who prefer services that are quick and easy to use also prefer useful customer care. This means that respondents will contact a call centre if they encounter difficulties with either setting up or using a service. The starting point in designing easy to use services is reducing the number of clicks before a customer reaches value (a service) to three (Hibberd, 2007: 14).

In addition, good training of customer care agents would assist in reducing the number of calls because a respondent would only need to call once for the query to be resolved, and would not need to be transferred between different call centre agents. Knowledgeable customer care agents will also reduce waiting queues on the customer care line, thereby reducing congestion. The more resources that are allocated to customer care the better it would be for customer retention.

All the network providers should lower the cost of services such as the e-mail and internet so as to encourage adoption of the services. Internet speeds should also be improved in order to encourage browsing and accessing the internet. This can be achieved by fiber connectivity as it increases speeds of the internet. Safaricom is making great progress in increasing internet speeds. They are the only service provider with the 3G network, they have invested heavily in the fibre optic cable and are currently involved in upgrading their 3G network to 4G.

#### **5.4. Recommendation for Further Research**

Thirty two percent of the respondents said they had never used mobile internet before and it ranked fourth in importance. This finding is a concern considering that Kenya has a very low fixed line internet penetration compared to mobile internet which is available on most mobile phones, thus making its penetration much higher. The youth are generally leading where trying new services is concerned and if eighteen percent of them have never used such a valuable service then the situation would be worse for other age groups. More research and money should be invested in growing this good service. The literature review identified the importance of the financial, societal and even the political environment on the domestication process before a service is embraced and used frequently. Furthermore it is important to note that research studies conducted in different countries have the potential to deliver completely different results due to the difference in these factors. Since this research concentrated mainly on mobile services consumers in Nairobi, further research of the same should be carried in other parts of the country i.e. other towns and rural areas.

This study looked at factors that may influence consumers' behavior towards adopting and using mobile services offered by network operators. However further study could be carried on how to change the behavior. The study brought out the fact that respondents were interested in services that deliver real value to them, in some instances irrespective of the cost and difficulties experienced in using the service as seen by results of accessing internet and email. Further research can be carried out to identify the form in which consumers' perceive this value.

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**APPENDIX I****BUDGET**

| DESCRIPTION (EXPENSE)   | AMOUNT (KSHS) |
|---|---------------|
| Pay for research assistants (fixed at Shs 2,000 per pay payable on completion and review of work done). | 8,000         |
| Stationery.   | 5,000         |
| Photocopying Expenses   | 1,500         |
| Binding   | 1,500         |
| Telephone   | 1,500         |
| Miscellaneous Expenses  | 3,000         |
| Total   | 20,500        |

## APPENDIX II

### RESEARCH QUESTIONNAIRE

I am a Diploma in Business Administration, School of Continuing and External Studies University of Nairobi carrying out a research project on Innovative mobile service offerings: consumer adoption and usage. This project is in partial fulfillment of the requirements for award of the above-mentioned degree. Thank you for taking your time to fill this questionnaire. I wish assure you that your response will be treated confidentially and shall NOT be used for any other purpose other than academic.

#### PART I

Gender

Male ( )                      Female ( )

Kindly indicate your age bracket in the categories below.

15-24 ( )                      25-34 ( )

35 - 44 ( )                      45-54. ( )

Above 55 ( )

Kindly tick the category you belong to from the below list.

Student ( )                      Employed ( )

Self employed ( )                      Other specify ( )

In the space below please indicate if employed, your designation, and if self employed, the nature of your business:

.....  
.....

Tick the mobile network(s) you are subscribed to.

Safaricom ( )

Airtel ( )

Orange ( )

Yu ( )

How would you rate your satisfaction level with your mobile network services? Tick in the spa provided below.

Highly Satisfied ( )                      Satisfied Not ( )  
 Satisfied ( )                              Not sure ( )

**PART II**

Which of the below mobile operator services do you know about?

| Service   | Tick |
|---|------|
| Voice   |      |
| Short message services (SMS)  |      |
| Access information/updates (e.g. news, sports, business, entertainment) |      |
| Download (e.g. ringtones and music)                                     |      |
| Accessing internet  |      |
| Accessing email   |      |
| Money transfer (e.g. Mpesa and ZAP)                                     |      |
| Airtime sharing (sending airtime to friends/family)                     |      |
| Other (specify)   |      |

How did you come to know about the service(s)?

Television ( )                      Radio ( )                      Newspaper ( )  
 Billboard ( )                      Brochure ( )

List any other source not mentioned above

What areas do you think need improvement in enhancing awareness on services?

.....  
 .....  
 .....

### PART III

Please rank the services listed below in order of their importance to you, with 1 (one) being very important and 8 (eight) the least important service. For example, if you feel 'Accessing internet from a cell-phone' is the most important service put 1 (one) in the column next to it. However if 1 (one) is chosen for a service, then, no other service can be assigned the same ranking or number.

| Service   | Rank Order |
|---|------------|
| Voice   |            |
| SMS   |            |
| Access information/updates (e.g. news, sports, business, entertainment) |            |
| Download (e.g. ringtones and music)                                     |            |
| Accessing internet  |            |
| Accessing email   |            |
| Money transfer (e.g. Mpesa and ZAP)                                     |            |
| Airtime sharing (sending airtime to friends/family)                     |            |
| Other (specify)   |            |

What do you value most about the service?

|  |  |
|--|--|
| Service  |  |
| Voice  |  |
| SMS  |  |
| Information/updates (e.g. news, sports, business, entertainment) |  |
| Download (e.g. ring tones and music)                             |  |
| Accessing internet   |  |
| Accessing email  |  |
| Money transfer (e.g. Mpesa and ZAP)                              |  |
| Airtime sharing (sending airtime to friends/family)              |  |

Please mark an X against the services that you do not use often or which you never use.

For each service you may select more than one reason.

| Service  | Service is of no value | Service is not affordable | Service is not available on my cell phone | Service is not simple to use |
|--|------------------------|---------------------------|---|------------------------------|
| Voice  |                        |                           |   |                              |
| SMS  |                        |                           |   |                              |
| Access information /updates                          |                        |                           |   |                              |
| Download (e.g. ringtones and music)                  |                        |                           |   |                              |
| Accessing internet                                   |                        |                           |   |                              |
| Accessing email                                      |                        |                           |   |                              |
| Money transfer (e.g.                                 |                        |                           |   |                              |
| Mpesa and Zap  |                        |                           |   |                              |
| Airtime sharing (sending airtime to friends/ family) |                        |                           |   |                              |
| Others (specify)                                     |                        |                           |   |                              |

**PART IV**

14. What are the challenges you have experienced when, using the services?

| Service  | Challenges when using the service |
|--|-----------------------------------|
| Voice  | 1.<br>2                           |
| SMS  | 1.<br>2.                          |
| Access information/updates<br>(e.g. news, sports, business, entertainment) | 1<br>2                            |
| Accessing internet   | 1<br>2                            |
| Download (e.g. ring tones and music)                                       |                                   |
| Accessing internet   |                                   |
| Accessing email  |                                   |
| Money transfer (e.g. Mpesa and ZAP)  |                                   |
| Airtime sharing (sending airtime to friends/ family)                       |                                   |

Kindly Suggest ways in which the above challenges can be addressed.

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