

**MOBILE VALUE ADDED SERVICES ADOPTION AND
CUSTOMER STICKINESS IN KENYA**

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**A Research Project Submitted in Partial Fulfilment of the
Requirements for the Award of Master of Business Administration
Degree, School of Business, University of Nairobi**

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DECLARATION

This research project is my original work and has not, wholly or in part, been presented for an award of any degree in any institution or university.

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Finally, but not the least, my family deserves warm thanks and blessing for all the love and faith they have shown me. BLESS YOU ALL!!

DEDICATION

To my Loving Mum Mary Njeri who has been a beacon in our lives, I sincerely distinguish you for the selfless love, support and urge for me to soar high. I humbly salute you on behalf of my siblings!

And

To my nephews and nieces: Kim, Nyambura, Mary, Susan, Ashley, Lewis and Shiku, greatness is beckoning to surpass Uncle.

ABSTRACT

The purpose for this study was to address mobile value added services adoption and customer stickiness in Kenya. The objectives of study were; to determine the respondents' awareness of mobile value added services; to establish the mobile value added services provided by the operators in Kenya and their uptake by customers; to determine the factors that influence the user attitudes towards mobile value added services; to determine the relationship between attitude, adoption (behavior intention and actual use) and stickiness of mobile value added services.

The study was conducted by utilizing an extended Technological Adoption Model (TAM) which included Perceived usefulness, perceived ease of use, perceived cost, perceived service quality, perceived enjoyment, perceived trust/image and perceived promotion offers as the factors that influence adoption of mobile value added services. Quantitative data analysis was performed. The findings showed that information category ranked highest compared to the other categories communications, entertainment and transaction. Further perceived ease of use and perceived promotion offer has no positive influence on attitude towards mobile value added services adoption. The rest of the dimensions are significant.

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ACRONYMS

VAS	Value Added Services
TAM	Technology Acceptance Model
MVAS	Mobile Value Added Service
GSM	Global System for Mobile
CCK	Communications Commission of Kenya
ICT	Information Communication and Technology
IS	Information Systems
IAMAI	Internet and Mobile Association of India
IMRB	Indian Market Research Bureau
TRAI	Telecom Regulatory Association of India
ITU	Telecommunications Regulatory Authority of India

CHAPTER ONE: INTRODUCTION

1.1 Background

The fast growth of mobile technology has been a global phenomenon. According to Chetan Sharma consulting (2011) there are more than 6 billion mobile subscribers worldwide. Mobile phones have profoundly transformed the telecommunications industry and they have been hailed as the new service frontier (Kleijnen et al. 2007). Kalba (2008) asserts that mobile phones are spreading everywhere across the planet and are considered a common manifestation of the latest phase of globalization. The global penetration reaches 87 per cent and 79 per cent in the developing world (ITU, 2011).

1.1.1 Mobile Value Added Services

Mobile value added services (also called mobile services or mobile VAS or MVAS for short) were initially provided by the Mobile operators as support technology. The mobile technology and service development is typically based on consumer acceptance as well as their future requirements (Kumar, 1997; Nagel, 2003). According to mobile telecommunication industry, IAMAI and IMRB (2008) defines VAS as the services that are not part of the basic voice offer and are availed off separately by the end user and are used as a tool for differentiation and allow the mobile operators to develop another stream of revenue. Therefore, mobile VAS are additional services besides voice that add value to the end user. They have four main categories: communication services (such as SMS and voice), entertainment services (such as mobile games and mobile videos), mobile transaction services (such as mobile banking and mobile shopping), and mobile information services (such as

breaking news and quotes) (Muller-Veerse, 1999; Varshney and Vetter, 2002; Coursaris et al., 2003).

1.1.2 VAS Adoption and Customer Stickiness

The market for mobile services is very large. The mobile voice service market is nearly saturated in every nation, and ARPU (average revenue per user) is decreasing every year (Muller-Veerse, 1999; MacKenzie and O'Loughlin, 2000; Arthur, 2001). With the saturated market, more competitors entering the market, mobile communication is rapidly becoming a commodity, we are now seeing other organizations such as media houses, content companies, internet companies and private equity becoming involved in this market (Wansink, 2012). Amiri and Kian (2010) argue that the most significant factor and differentiation method in the saturated and mature service market is offering Value Added Services or VAS in addition to voice service which will give rise to more market share and market development. There have been major success in some of the innovative mobile VAS in the growth markets (see Appendix A). Aarnio et al. (2002) show that the consumer masses are not using mobile services, and that the pricing of mobile services is currently a significant barrier to adoption of mobile commerce. The difficulty in promoting mobile VAS sales is that individual customer's preferences to certain mobile VAS are vague and often confusing. (Kuo & Chen, 2006). According to Methlie and Pedersen (2005), users are unlikely to adopt these services if they do not perceive their true value.

Customer stickiness of value added services is whereby the customers utilize the service over and over again. A mechanism in traditional marketing used to assess and

boost customer retention called “stickiness” in the e-commerce context was discussed by Nemzow (1999). The author suggested that stickiness could be created through various ways ranging from brand awareness, frequent buyer program, to creating financial hurdle that discourages customers from switching to competitors. The customer of mobile value added service are ‘stuck’ when they are satisfied with the service offered and would keep utilizing it. Customer stickiness is more reliant on customer satisfaction (Violino, 1999). A good example is M-Pesa where Safaricom customers have been ‘locked-in’ making it difficult to switch to other networks with much more cheaper VAS offerings. It is the aim of every mobile operator to retain and maintain a satisfied customer. Customer stickiness transforms business from a transaction-based model to a more lasting, mutually beneficial one in which companies improve their own revenues and margins by improving their customers' competitiveness (Welch and Welch, 2008).

1.1.3 Kenya Mobile Industry

The uptake of value added service in Kenya is not fully developed. This is because customers are not fully aware of the various value added services offered by the mobile operators. According to industry estimates (Rao, 2011), there are more than 500 million mobile phone subscribers in Africa now, up from 246 million in 2008. The four biggest mobile phone markets in Africa are Nigeria, South Africa, Kenya, and Ghana (Rao, 2011). There are four mobile operators who dominate the market with Safaricom having the largest market share. These operators are Safaricom, Airtel, Yu, and Orange-Telkom with 19.1 million, 4.5 million, 3 million and 2.6 million subscribers respectively.

The ICT sector has been driving growth over the last decade. The financial services sector has recently adopted ICT-based innovations resulting in increased competition and efficiency gains. Mobile money transfer services in Kenya offered by Safaricom Limited-, Airtel Networks Kenya Limited, Essar Telecom Kenya Limited, Telkom Kenya Limited, Mobile Pay Limited and Mobikash Africa Limited continued to spur the telecommunication industry’s contribution to GDP (CCK, 2011). Safaricom’s M-Pesa, Zain’s Zap (now Airtel Money), Essar’s Yu Cash, and TKL’s Orange Money (IkoPesa) that were introduced in March, 2007; January, 2009; December, 2009 and November 2010 respectively. However, M-Pesa is by far the largest system, accounting for 82.4 per cent of mobile money transfer service subscriptions (CCK, 2012). As shown in Table 1, the mobile telecommunication market in Kenya has been growing rapidly over several past years, from around 127, 400 subscribers in 2002 to become approximately 29.2 million subscriptions as at 31st March 2012 (CCK, 2012).

Table 1: Kenya Mobile Subscriptions 2000-2011

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
127,404	600,000	1,187,122	1,590,785	2,546,157	4,611,970	7,340,317	11,349,412	16,303,573	19,364,559	24,968,891	26,980,771

(Source: ITU, 2011)

Kenya Mobile Operators are facing cut-throat competition and with the Average Revenue per user (ARPU) decreasing, the margins are very low. Mobile operators are therefore looking to VAS as the next wave for growth. Mobile VAS are expected to form mobile operators’ strategy to make up for the dwindling revenues obtained from users (Kuo & Chen, 2006). In a war for market share, mobile operators in Kenya

rapidly find themselves competing fiercely, using incentive packages that include rate cuts, free minutes, free SMS, bonus airtime, free airtime, free phones, free data bundles and much more. With new and cheaper schemes being introduced everyday, mobile content and applications are the only way to keep a subscriber stuck to particular services. Grant (2008) argued that innovation in mobile VAS creation is the main source of both service differentiation and important revenue stream. A good example is the M-PESA provided by Safaricom. In spite of the widespread offerings of mobile services, there are relatively few studies concerning acceptance of mobile services (Ristola, 2010).

1.2 Problem Statement

As the Kenyan mobile market heads toward the saturation and maturity, the value added services (VAS) of each operator will be the most important factor of operators' competition. According to Mather (2005), the challenge is that a competitor can show up in one of the established markets with new technology, better people, a better network of companies for support and a better management style and steal huge chunks of your business before you can respond. As operators try to attract more customers, prices for mobile services will decrease as competition intensifies (Buehler and Haucap, 2004). There is a serious lack of awareness among many consumers about value added services as they mainly use their mobile for making voice calls and sending messages, thus many customers do not use these services. Additionally, excessive cost of VAS affects consumer adoption of these services (Erlandson & Ocklind, 1998; Schultz, 2001).

Although various mobile VAS have been released, whether ARPU can be effectively enhanced remains a question. Consumers' attitudes toward mobile services have been considered a key indicator of service effectiveness and consumers' belief in mobile services (Tsang et al., 2004). Loyal customers build the business by buying more, paying premium prices, and give a new direction through positive word of mouth from time to time (Ganesh et al., 2000). Since services are intangible, consumers are often faced with not knowing what to expect of a service until they have consumed it, and hence perceive services as risky (Murray and Schlacter, 1990). This research gap—a lack of awareness towards mobile VAS presents this study with a research opportunity. Therefore, this research seeks to address answers to the questions; What factors influence attitude towards mobile VAS adoption, and what is their influence on customer stickiness in Kenya?

1.3 Research Objectives

The general objective of this study was to analyze mobile value added services adoption and customer stickiness in Kenya. The specific objectives of this study were to:

1. Determine the respondents' awareness of mobile value added services.
2. Establish the mobile value added services provided by the operators in Kenya and their uptake by customers.
3. Determine the factors that influence the user attitudes towards mobile value added services.
4. Determine the relationship between attitude, adoption (behavior intention and actual use) and stickiness of mobile value added services.

1.4 Value of Study

The proposed study has wide implications to various stakeholders, including the mobile VAS providers, mobile subscribers, academia and practitioners in the industry. The specific benefits include: First, the MVAS market has significant players in the value chain and includes mobile phone manufacturers, mobile and/or network operators, content providers and media houses. The study will be useful in providing valuable reference information for mobile value-added service providers to manage their services and enhance their service quality. Moreover, the study will provide a good basis for industry to develop a framework to determine the adoption potential of new mobile value added services.

Secondly, this study will be useful to any interested mobile subscriber in enhancing their awareness towards mobile VAS provided by different mobile operators. Thirdly, this study will go a long way go a long way in providing ample base for further research in academic institutions since little research has focused on adoption of mobile value added services in Kenya. Lastly, the study will be useful to industry practitioners in the telecommunication sector for formulating appropriate policies and marketing strategies to enhance uptake of future mobile VAS.

CHAPTER TWO: LITERATURE REVIEW

This chapter reviews the various aspects pertaining to mobile value added services, including the definition, enabling technologies and general categories. Moreover, it further gives a brief overview of the Kenya mobile market. Lastly, the conceptual framework used for the study by introducing the adoption factors that impact on consumer acceptance and adoption of mobile VAS and how they influence customer stickiness.

2.1 Mobile Value Added Services

The mobile VAS has many components which include:-

2.1.1 VAS Categories

The category of mobile value added services depend on its application. Generally, the applications of mobile VAS are divided into the following four categories (Muller-Veerse, 1999; Varshney & Vetter, 2002; Coursaris et al., 2003). The first category is mobile communication services which provide telecommunication services such as short message service (SMS), e-mail, mobile chat and multimedia messaging service (MMS). Mobile communication services are presently the most successful applications of value-added services. They are mainly intended to facilitate communication among consumers.

The second category is mobile entertainment services that provide users with entertainment application services, such as the downloading of ringing tones, images, games and other fun and entertaining services. Mobile entertainment is only the second major achievement of mobile value-added service applications on mobile

telecommunications. Moore & Rutter (2004) defined mobile entertainment as any leisure activity made through a personal technology device, which is, or has the potential to be, networked and allows transfer of data (like voice, sound and images) on the move, and on distance with various geographical locations. According to Kalakota and Robinson (2001), fast and easy access to entertainment is always appealing to customers. Using the term “time filler” rather than “time killer” services, Kalakota and Robinson (2001) argue that entertainment applications such as digital music and games can be seen as the perfect complement to mobile devices.

The third category is mobile transaction services. They provide users with business and banking services, such as mobile shopping (m-shopping), mobile banking (m-banking), bill payments (m-payments) and on-line ticketing. In a GSM telecommunication environment, the SIM tool kit (STK) card is needed for telecommunications to provide mobile transaction services. A subscriber identity module (SIM) card is more difficult to reproduce than a credit card.

Lastly, mobile information services which provide users with prompt information services, such as breaking news, financial news, stock quotes, sport news, bible quotes and other informational needs. Significantly, mobile information services can provide users with prompt news delivery. A fee is attached to this service, thereby making it particularly lucrative.

2.1.2 VAS Delivery Platforms

Mobile operators deliver the mobile VAS using any of the following delivery platforms depending on the type of content (TRAI, 2011). First, Short Message Services (SMS)/Short Codes which are special form of telephone numbers shorter

than ordinary telephone numbers usually four digits for the Kenyan mobile operators. The short codes are mainly used for services such as voting during television (TV) programs, to answer questions and win prizes through TV or radio, ordering ringtones, to apply for jobs, bill notifications and other purposes. The SMS traffic generates revenue for operators and application provider, but the main reason the voting or quiz launched is actually to increase the rating for that TV program (Andersson et al., 2006).

Secondly, Interactive Voice Response (IVR) platform which integrates computer and telephony to detect voice and touch tones using a normal phone call. The IVR access to a self-care application related to billing enquiry, top-ups, activation, or deactivation of a network service. For example, 234 and 222 for Safaricom and Airtel customer service respectively.

Thirdly, Wireless Application Protocol (WAP) and General Packet Radio Service (GPRS). This allows internet browsing on WAP enabled or smart phones and include data services like multimedia messaging services (MMS), downloading of music, video, wallpapers and mobile TV and access of mobile social networks such as Facebook and twitter. Fourthly, Unstructured Supplementary Services Data (USSD). This is a session oriented service of transmitting information or instructions over mobile network. Mobile banking services in Kenya are deployed using this platform. Lastly, the Subscribers Identity Module (SIM) toolkit application (STK) where mobile money transactions M-PESA, Airtel Money, YU Cash and Orange Money are provided.

2.1.3 VAS Business Models

In literatures focusing on online and mobile content services, a 'business model' is defined as the method of doing business by which a company can generate revenue (Rappa, 2007) or as the strategy used to generate revenue by specifying markets, products, customers and the position of the business in the value networks (Yunos et al., 2003). The users of value added services access the content through various models. One of the models is subscription where signs for the service of interest, the content is delivered and charged until he or she opts out. The other one is push model where content are delivered without request or with indirect request from the user for example mobile advertisement and promotions. The third is pull model which initiated by customer such as browsing mobile internet, mobile banking, bill enquiry and mobile shopping.

On the other hand, the models for value chain are many and work just as in any other industry (Labroo et al., 2010). Revenue share model is one, where total revenue is being divided amongst the operators, content owners, and service providers according to predetermined percentage. The second model is managed service, where the service provider delivers all the services and manages the complete platform. Finally, there is the licensed model in which the mobile operator or service provider buys the platform one-off.

2.2 Theories of Mobile VAS Adoption

One of the important and significant issues related to IT is to identify factors that cause people accept new technologies and information systems and use them (Rao &

Troshani, 2007). Several theories have been applied to explain the acceptance and adoption of mobile VAS and include;

First, Theory of Reasoned Action (TRA) which was developed by Fishbein and Ajzen (1975) to explain behaviour intention (use technology), is explained by people's attitudes toward that behaviour and subjective norms. This theory, as long as the behaviour is voluntarily controlled by the individual, can accurately explain the factors influencing technology adoption (Laukkanen & Cruz, 2009).

Secondly, Theory of Planned Behaviour (TPB) which was developed by Ajzen (1991) from theory of the theory of reasoned action through adding construct "perceived behavioural control" into the model as a determinant of behavioural intention. This theory is a social-psychological theory in which attitude is the general feeling of people about the desirability or undesirability of a particular issue or behaviour (Ajzen, 1975). Subjective norm refers to individual's perception of important people's opinions about doing or not doing the behaviour.

Thirdly, The Diffusion Innovation theory which was developed by Rogers (1983) and he defines it as "the process by which innovation is communicated through certain channels over time among the members of social system". It seeks to explain how innovations are taken up in a population. Fourth, Technology Adoption Model (TAM) proposed by Davis (1989) which is widely accepted as a framework for understanding users' IT acceptance processes to address IT adoption and usage. Agarwal and Prasad (1999) claimed that the main reason for popularity of TAM is perhaps its parsimony, as well as its wealth of recent empirical support. Perceived usefulness and perceived

ease of use are the factors that determine user's acceptance or rejection of information technology.

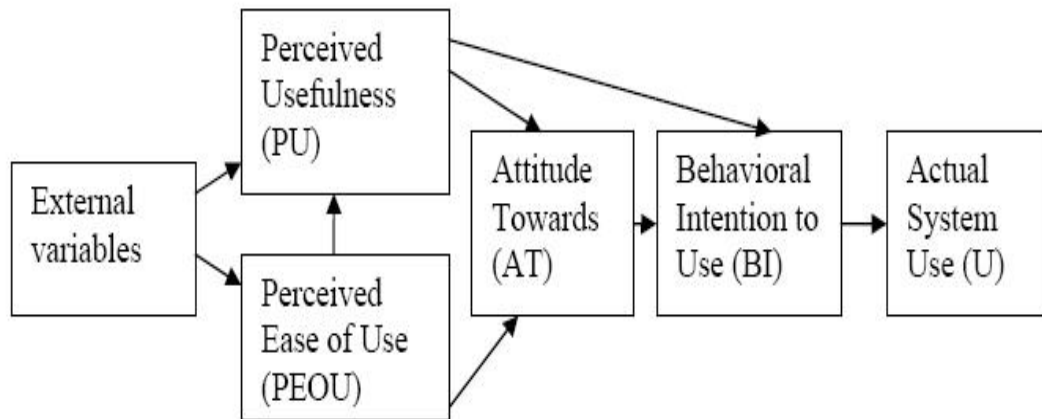


Figure 1: Original Technology Model (Davis, 1989)

2.3 Kenya Mobile VAS Market

There are many mobile VAS available today. In Kenya there is high competition for this market and the mobile operators provide more or less the same services (see Appendix B) for the categories of mobile services offered. Grant (2008) argued that “the key to successful differentiation is to understand customers”. In term of M-VAS creation, he further affirms that it is imperative for the mobile services to be personalized, unique, desirable and able to give value to customers.

Ahn et al (2010), points that there are two types of subscribers who do not buy or use mobile VAS. The first type is the people who have no interests in using mobile VAS or are not able to use it. They simply think that mobile VAS do not offer any benefits. The second type is the subscribers who may have interests and may find benefits in using mobile VAS, but are not aware of the availability of the services. This is the

scenario in Kenya for the mobile value added service market where customers. Lack of awareness hinders successful adoption of current and new mobile value added service offered by the operators. This study will look at the factors that influence the adoption of value added services and eventually the relationship between attitude and customer stickiness.

2.3.1 VAS Value Chain in Kenya

The mobile commerce value chain is the linkage and integration of a series of activities in which enterprises deliver the created and valued products or services to customers (Porter, 1985). Value creation in the MVAS segment was originally dependent on and driven by the telecom operators and was introduced as an additional feature along with the standard voice communication services (Smart Research Institute, 2011).

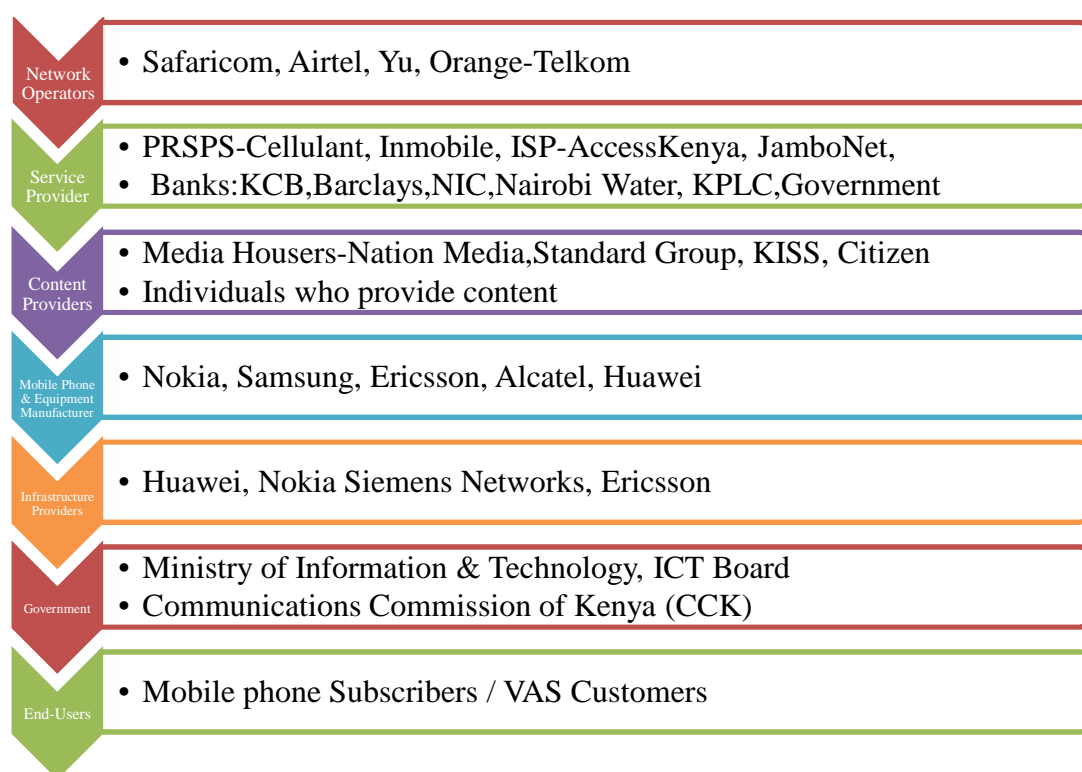


Figure 2: VAS Value Chain for Kenya (Own compilation)

The mobile VAS value chain in Kenya (see Figure 1) includes the network operators who are the core in the value chain and provide the infrastructure of delivering of VAS. The service providers are premium rate service providers who integrate with the network operators to sell content. The other is content providers that provide required contents like text, voice, music, picture and film. Examples of content providers are Media houses, Cinema theatre, Artists, among others. Content is the key factor in M-VAS that attracts the users and it can range from news to shopping and ticketing services, entertainment services, financial services, and so forth (Sadeh, 2002; Paavilainen, 2002). The mobile phone and equipment manufacturer are in charge of support by providing the relevant technology and applications.

The infrastructure providers like Huawei and Nokia Siemens Networks are the backbone of mobile phone networks regarding hardware and equipment for Safaricom and Airtel respectively. The government through governing bodies like CCK, ICT board and Ministry of Information and Technology are regulators of mobile VAS. Finally, the end user who are mobile subscribers or the customers using the VAS from their mobiles form the other end of the value chain and use the data services in tandem with the voice services, eventually they determine whether VAS is successful or not.

2.4 Conceptual Framework

This study utilizes an extended Technology Adoption Model (TAM) as a research framework. Many authors, for example Haque (2004), Harris et al. (2005), Mylonopoulos et al. (2006), Nysveen et al. (2005) and Scornavacca et al. (2006) claim that developing an understanding of the factors that influence end-user

(consumer) behaviour and acceptance of new mobile services is important at this early stage of the mobile evolution because consumer acceptance is a critical foundation for the continued expansion of the market for mobile services. The concepts used are perceived usefulness, perceived ease of use, perceived cost, perceived enjoyment, perceived service quality, perceived image/trust and perceived promotion offers. To accomplish this, these constructs and their relevance to mobile services are discussed and theoretical hypothesis given.

Perceived usefulness

Perceived usefulness is defined as “the degree to which a person believes that using a particular system would enhance his or her job performance” (Davis, 1989). In the case of mobile services, perceived usefulness is defined as the degree to which the mobile services provide benefits to individuals in everyday situations (Knutsen et al., 2005). Consumers are constantly look for more efficient ways to do simple everyday activities, and as a timesaver for practical activities such as mobile banking, bill payments and travel reservations (Kalakota and Robinson 2001).

The hypothesis set forth is;

H1: Perceived usefulness has a positive influence on the attitude of users towards adopting mobile VAS.

Perceived ease of use

Perceived ease of use is defined as “the degree to which a person believes that using a particular system would be free of effort” (Davis, 1989). In the mobile setting, perceived ease of use represents the degree to which individuals associate freedom of difficulty with the use of mobile technology and services in everyday usage

(Knutsenet al., 2005). Hence, mobile services which are perceived to be easier to use than others are more likely to be accepted by users (Pikkarainen et al., 2004).

Hence the hypothesis is

H2: Perceived ease of use has a positive influence on the attitude of users towards adopting mobile VAS.

Perceived Cost

Perceived cost is the perceived quantifiable costs of acquisition and use of technology (Koenig-Lewis et al., 2010). A customer will think twice of the cost and benefits accrued in using a mobile service.

Hence the hypothesis set forth is;

H3: Perceived cost has a positive influence on the attitude of users adopting mobile VAS.

Perceived Service Quality

Customer perceived service quality can be defined as a global judgment or attitude relating to the superiority of a service relative to competing offerings (Parasuraman et al., 1988). In simple words Jiang and Wang, (2006) defined it as the consumer's evaluation of the service performance received and how it compared with their expectation.

The hypothesis is:

H4: Perceived service quality has positive influence on the attitude of users adopting mobile VAS.

Perceived Enjoyment

Perceived enjoyment refers to the degree to which using an innovation is perceived to be enjoyable in its own right and is considered to be an intrinsic source of motivation (Al-Gahtani & King, 1999). Upon adoption, individuals are more likely to use the mobile services that offer enjoyment more extensively than those who do not (Fang et al., 2001; Kaufaris, 2002; Novak, 2000).

Therefore, the hypothesis derived is;

H5: Perceived enjoyment has a positive influence on the attitude of users towards adopting mobile VAS.

Perceived Image/Trust

Image refers to the degree to which the adoption and the use of an innovation is perceived by users to enhance their image or status in their social system (Al-Gahtani & King, 1999). For instance, the Kenyan youth are influenced by image and no one would like to be left once a new service is introduced such as mobile social networks and use of smartphones.

Thus the hypothesis set forth is:

H6: Perceived Image/Trust has a positive influence on the attitude of users towards adopting mobile VAS.

Perceived Promotion Offer

Promotions offers are facilitating conditions and they refer to external controls and catalysts in the adoption environment which aim at facilitating adoption and diffusion of new technologies (Terry, 1993). For example, mobile operators can encourage

adoption by providing handset subsidies, free content, mass advertising campaigns and active promotion aimed at increasing awareness about mobile services (Teo et al. 2003).

Therefore, the hypothesis is:

H7: Perceived promotion offer of mobile services has a positive influence on the attitude of users towards adopting mobile VAS.

The literature review reveals the components that make up the mobile VAS landscape. The market scenario for market services in Kenya shows that an investigation is required in order gauge the uptake and tailor future mobile services. Mass adoption means the growth and maturity of the value added services. The figure 3 below outlines the factors to be studied and relationship between these factors towards stickiness of mobile value added services by end users in the Kenya.

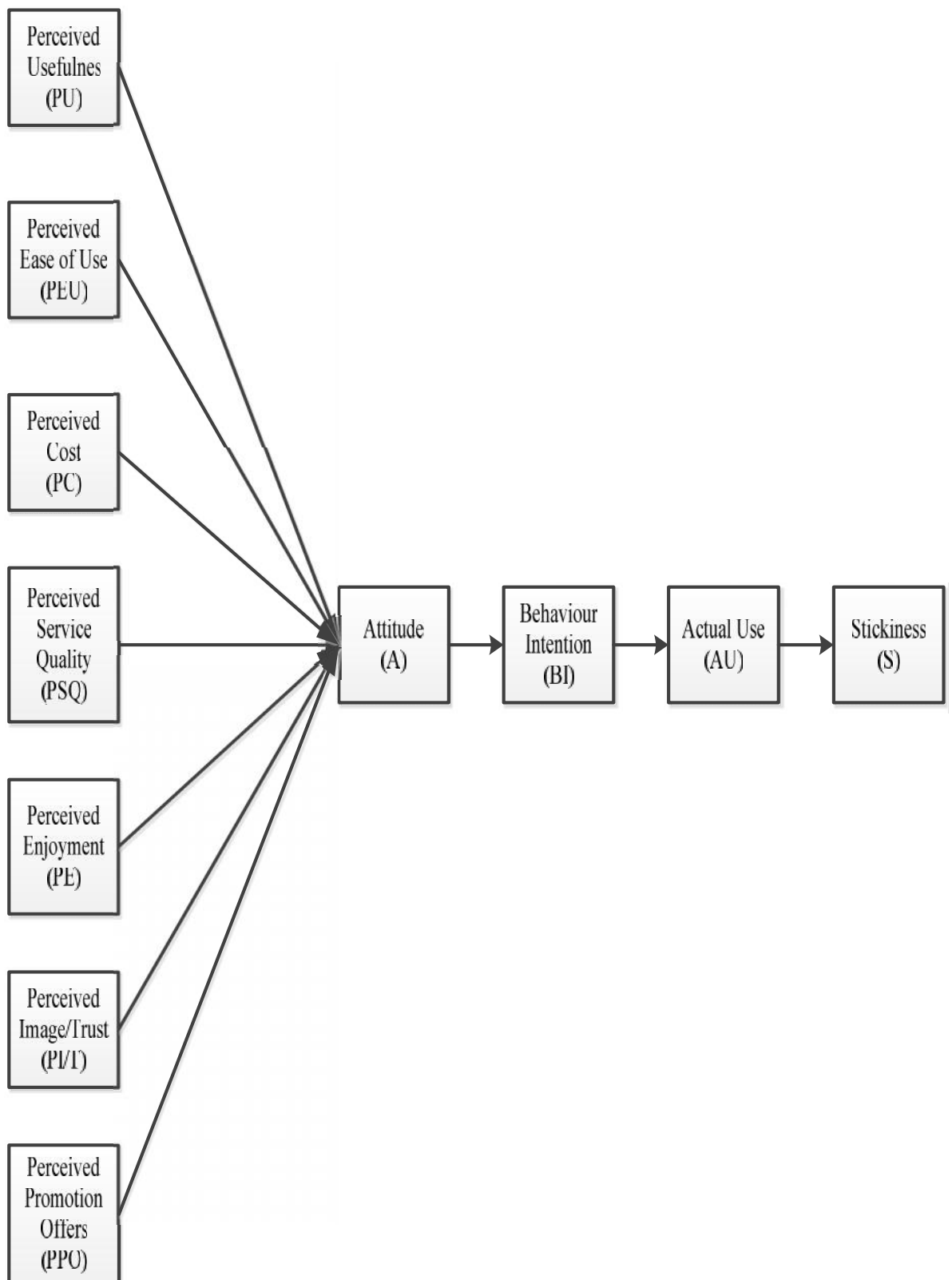


Figure 3: The Proposed Research Model

Table 2: The Research Hypotheses

Path	Hypothesis	
PU>A	H1	Perceived usefulness has a positive influence on the attitude of users towards adopting mobile VAS.
PEOU>A	H2	Perceived ease of use has a positive influence on the attitude of users towards adopting mobile VAS.
PC>A	H3	Perceived cost has a positive influence on the attitude of users adopting mobile VAS.
PSQ>A	H4	Perceived service quality has positive influence on the attitude of users adopting mobile VAS.
PE>A	H5	Perceived enjoyment has a positive influence on the attitude of users towards adopting mobile VAS.
PIT>A	H6	Perceived Image/Trust has a positive influence on the attitude of users towards adopting mobile VAS.
PPO>A	H7	Perceived promotion offer mobile services has a positive influence on the attitude of users towards adopting mobile VAS.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Research Design

This study is a cross-sectional survey type of research. The survey is appropriate for this study because the study will endeavour to find stand of adoption of mobile value added services in Kenya. The survey type of design is most suited for gathering descriptive information (Sekaran, 1992). Surveys are easier to administer, they allow the researcher to determine the values and relations of variables and constructs, provide responses that can be generalized from the sample collected to the population of interest. Survey has its limitation in that respondents (in this case end-user) may be reluctant to answers questions asked; busy people may not want to participate or may answer to look smart.

3.2 Population and sample

3.2.1 Population

The study population was drawn from the University of Nairobi School of Business mobile phone subscribers or users of valued added services and included undergraduate students, MBA students and lecturers as shown in Table 2 below.

Table 3: Study Population (University of Nairobi-School of Business)

Strata	Strata Size	Proportion %
Undergraduate students	2,000	48
Postgraduates students (MBA)	2,000	48
Lecturers	150	4
Total	4,150	100

3.2.2 Sampling

Sampling was both stratified random sampling. The sample size was derived from the formula:

$$n = \frac{N}{1 + N(e)^2}$$

Where n is the sample size, N is the population size and e is the level of precision or sampling error which is the range in which the true value of population is estimated to be. Therefore the sample size from the above population size of 4,150, and 95% confidence level and as 0.5% is 364. The sample target for undergraduates (175), MBA (175) and Lecturers (14).

3.3 Data Collection

The study relied mainly on primary data which was collected through the use of a questionnaire (Appendix C). The research instrument was divided in four parts. Part A was designed to collect the respondents' background. The other parts B, C, and D were designed to collect data on the four study objectives. Specifically, Part B was intended to collect on respondents' awareness on mobile VAS. Part C outlined various factors that influence user attitudes towards mobile VAS whereas part D listed various factors that lead to stickiness of mobile VAS. Measurements items used were adapted from (David et al, 1989) and some developed when reviewing literature.

The first study objective sought to determine customer awareness of mobile VAS. The second objective sought to establish mobile VAS provided by the operators and respondents were required to indicate their extent of usage on a likert scale (1=never, 2=used once, 3=rarely and 4=always). Finally, third and fourth objectives sought to

determine various factors that influence the attitude towards mobile VAS and relations between factors of mobile VAS respectively and various aspects of measurement were listed on a likert scale where 1 - “strongly disagree” to 5 - “strongly agree”. To facilitate data collections, both drop-and-pick later method and largely personal administering were used. In total 316 filled questionnaires were collected and subjected to data entry, data cleaning, data coding and analysis.

3.4 Data Analysis

The presentation, analysis and interpretation of the collected data was done with the help of Statistical Package for Social Sciences (SPSS) and Microsoft Excel. Descriptive and analytical statistics were used to analyze the data. Descriptive statistics was used on background information to determine the categories of the respondents.

The first study objective sought to establish respondents awareness of mobile VAS, descriptive analysis was used to determine the level of awareness. The second objective was to establish the major services provided and their uptake by customers; descriptive and correlation statistics were used to test which mobile services are mostly used by the customers. Regression analysis was used for objective three which was to establish the factors that influence the user attitudes towards mobile VAS.

$$\text{Regression Model: } Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \epsilon$$

Where Y=Attitude (A)

X1 = Perceived usefulness (PU)

X2= Perceived ease of use (PEU)

X3= Perceived cost (PC)

X4= Perceived service quality (PSQ)

X5= Perceived enjoyment (PE)

X6= Perceived Image/Trust (PI/T)

X7 =Perceived promotion offers (PPO)

Correlation was used to determine the degree of association between the variables.

The fourth objective was to determine the relationship between attitude; adoption and stickiness of mobile VAS, regression and correlation analysis were used assuming:

The regression models $y = f(x)$:

$$BI = f(A)$$

Where, BI=Behavior intention and A=Attitude

$$AU = f(BI)$$

Where, AU=Actual use and BI = Behaviour intention

$$S = f(AU)$$

Where, S=Stickiness and AU = Actual use

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter discusses the study results as to the mobile value added services adoption and customer stickiness. From the target population on 364, a total of 316 questionnaires were filled and collected back giving response rate of 87 per cent.

4.2 Data Analysis and interpretation

4.2.1 Customer Profile Distribution by Gender, Age, Level of Education and Occupation.

With respect to gender, the majority of respondents were female (50.49%) more than the male (49.51%) (See figure 4). The respondents' age was categorized into five-age brackets. The distribution is shown in Table 4 where most were in 18-25 years age bracket (68%). With respect to level of education and occupation, both undergraduate and those who indicated that they were full time student were 82% as shown in Table 5 and Table 6 respectively. Although the population sample were students, those who indicated other occupations were private sector at eight (8%) per cent and both public sector and self-employed were five per cent (5%).

Table 4: Distribution by Age

Age Bracket	Frequency	Percent
< 18yrs	31	10
18-25yrs	216	68
25-40yrs	59	19
40yrs & Above	10	3
Total	316	100

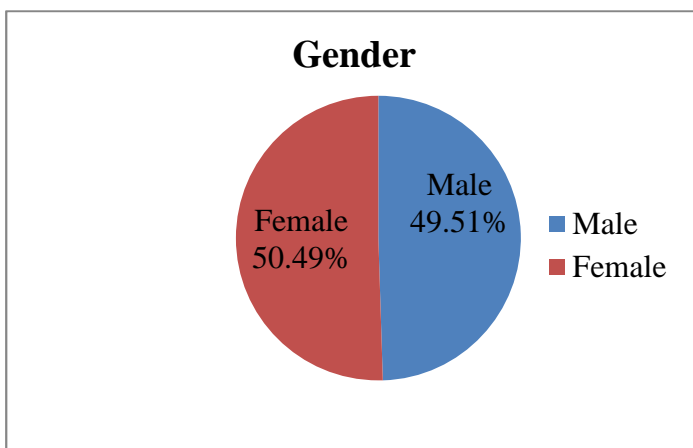


Figure 4: Distribution by Gender

Table 5: Distribution by Education Level

Education Level	Frequency	Percent
Undergraduate	255	82
Postgraduate	57	18
Total	312	100

Four respondents did not provide their education level hence were excluded from this analysis

Table 6: Distribution by Occupation

Occupation	Frequency	Percent
Student	259	82
Public Sector	16	5
Private Sector	24	8
Self Employed	17	5
Total	316	100

4.2.2 Customer Awareness and Extent of Usage or uptake of the Mobile VAS Provided

The respondents were asked to give how long they have been using mobile phone, the main operator and other operators, and the mode of connection either prepaid or post-paid. Furthermore, they were asked to state the extent of usage on major mobile VAS offering.

From the analysis on Table 7, most of the respondents have been using the mobile phone for more than 5 years (47%), those who had been using between 3-4 years accounted for 19%, whereas those between 4-5 years were 12% and finally both less than 1 year and 1-2 years accounted for 11%.

Table 7: Distribution by the Length of Usage

Usage	Frequency	Percent
< 1yr	35	11
1-2yrs	35	11
3-4yrs	58	19
4-5yrs	38	12
More than 5yrs	145	47
Total	311	100

Five Respondents did not provide length of time they have been using the mobile phone hence they were not included in this analysis

In terms of the main operator subscribers, the Figure 5 below shows that Safaricom dominates by 90%, followed by Airtel accounting for 7%, Orange and Yu accounted for 2% and 1% respectively. From Table 8, respondents who have subscribed to more than one cell phone line, Airtel leads with 28%, followed by Yu (17%), Safaricom

(12%) and Orange (8%) in that order. Those who either did not indicate the other mobile operator or they have only one main operator were 35%.

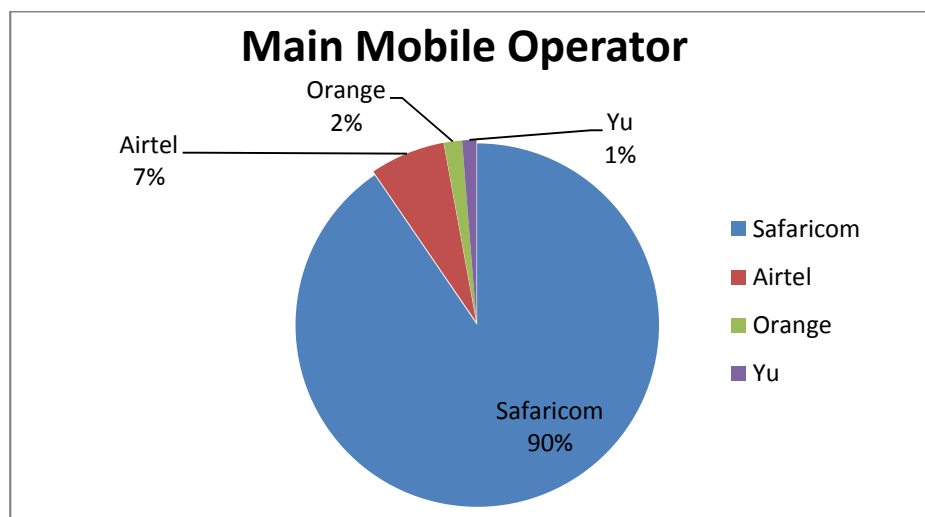


Figure 5: Main Mobile Operator

Table 8: Distribution by other Mobile Operators

Other Operators	Frequency	Percent
Safaricom	38	12
Airtel	90	28
Orange	25	8
Yu	53	17
None	110	35
Total	316	100

With regards to the type of connection (see Figure 6 below), majority of the respondents are prepaid subscribers (87%). Postpaid subscribers account for only 13%.

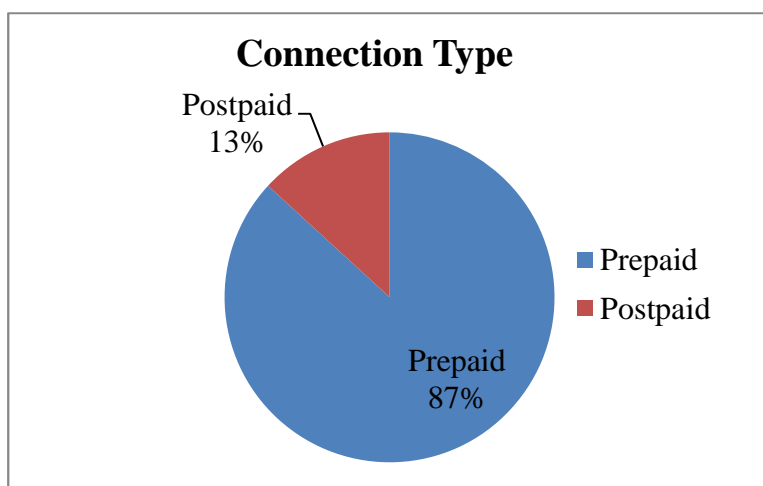


Figure 6: Customers' Type of Mobile Phone Connection

With regards to knowing mobile VAS Table 9 below, shows that 43 per cent of the respondents indicated to having known the mobile VAS through advertisement, followed by family and friends (33%).

Table 9: Customers' Source of Knowing Mobile VAS

Source of Awareness	Frequency	Percent
Advertisement	130	43
Operators promotions	38	13
Family & Friends	99	33
Internet	37	12
Total	304	100

Twelve of the respondents didn't indicate how they came to know about the services thus were not included in the analysis

4.2.3 Uptake of Mobile VAS provided by the Mobile phone Operators

In terms of mobile VAS provided by the operators in Kenya and their uptake by customers; the top most value added in each category with regard to awareness and extent of usage for communication, mobile data/internet with a mean of 3.67, mobile social network such as Facebook, twitter gives a mean of 3.56 in entertainment, for

transaction M-Pesa gives a mean of 3.64 and internet browsing for information gives a mean of 3.66. Table 12 (Appendix D) represents the means and standard deviations of the services. From Figure 7, it is observed that Information was the most important category accounting for 66.84%, Communication 65%, Entertainment 61.85% and the Transaction 40.17% scoring the least.

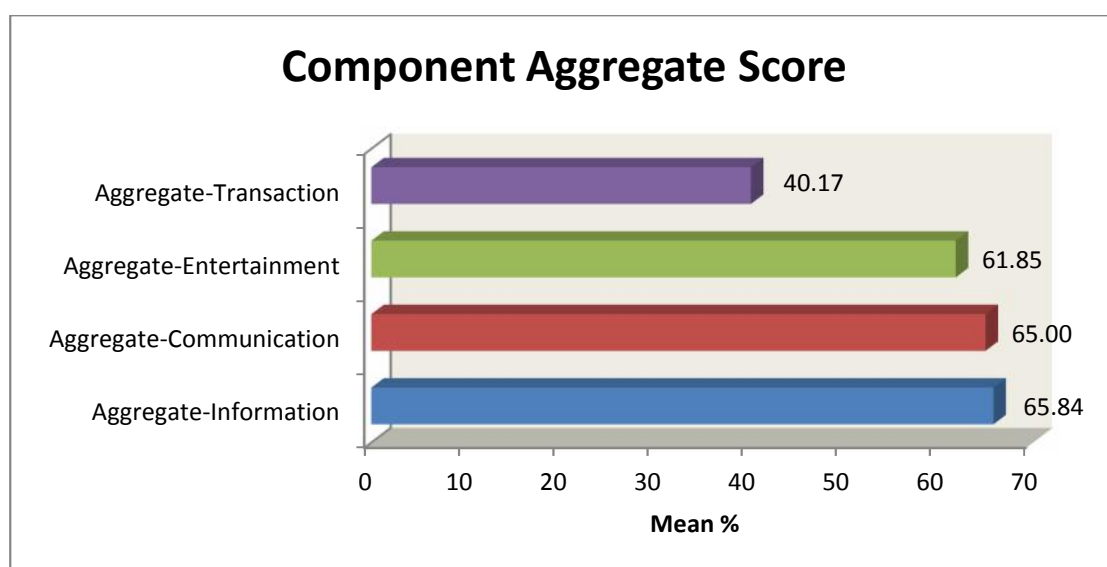


Figure 7: Aggregate Component Mean Score

4.2.4 Factors that Influence the user Attitudes towards Mobile VAS (Hypotheses Testing)

Prior to the testing of the hypotheses, reliability test was done on the variables and Cronbach's Alpha was used to measure internal consistency. The results of the reliability test for the measures are presented in Table 10 and indicate that all measures for the study were reliable. Hair et al (2003) state that a value greater than .60 is satisfactory and desired value greater than .70 (Nunnally, 1978). To measure validity the questionnaire was given to a number of people whom agreed that it measure the attributes it intends to measure. The importance of the factors in terms of

aggregate mean score is summarized in Figure 9, where Information (82.86%) is the highest in order of importance for this study and the least scored is transaction (67.08%). Table 13 (Appendix D) gives the mean score with the scale from 1 to 5 and indicates that it is greater than (+3) for Neutral.

Table 10: Cronbach's Alpha Reliability Test Results

Variable	Cronbach's Alpha	N of Items
Perceived Usefulness	.812	5
Perceived Ease of Use	.846	5
Perceived Cost	.630	5
Perceived Service Quality	.793	5
Perceived Enjoyment	.813	5
Perceived Image-Trust	.776	5
Perceived Promotion Offerings	.640	5
Attitude	.826	10
Behaviour Intention	.845	5
Aggregate-Actual Use	.660	5
Aggregate-Stickiness	.806	5

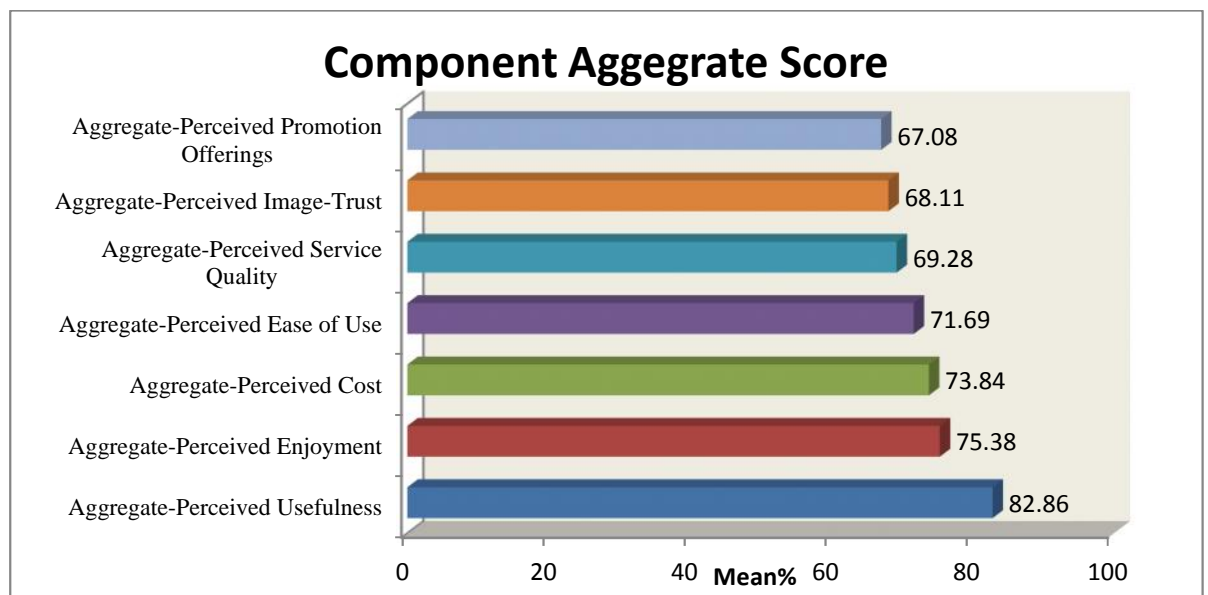


Figure 8: Aggregate Component Mean Score

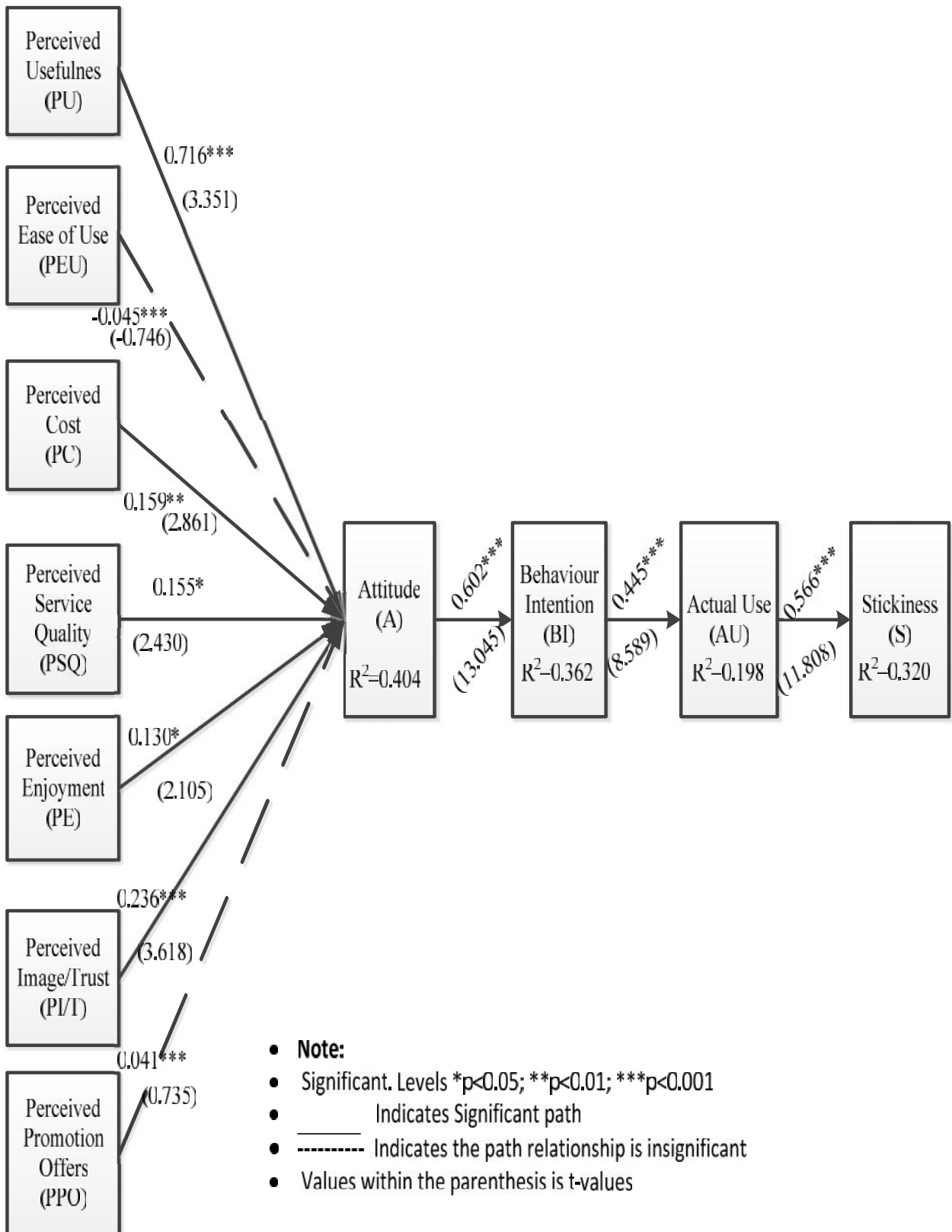


Figure 9: Hypotheses testing results

Figure 9 and Table 11 presents the hypotheses testing of different factors, their path, t-values and the results of the hypothesis. The analysis shows that all hypotheses are supported except perceived ease of use and perceived promotion offers. The correlation is low between attitude with both perceived ease of use and perceived promotion offers with 0.384 and 0.379 respectively as shown in Table 14 (Appendix D). The results of the main regression model based on the seven independent variables are shown in Table 15 (Appendix D). The coefficient of determination was ($R^2=0.404$) which explains that these variables accounted 40.4% of variance. The relation is positive and significant ($p<0.001$). For hypothesis H1 perceived usefulness has a positive influence on attitude ($\beta=0.716$, $t=3.351$, $p<0.001$). Thus H1 is supported.

For hypothesis: H3 that perceived cost positively influences attitude, ($\beta=0.159$, $t=2.86$, $p<0.005$). H4 that perceived service quality has a positive influence on attitude ($\beta=0.155$, $t=2.43$, $p<0.016$), H5 that perceived enjoyment has a positive influence on attitude ($\beta=0.130$, $t=2.105$, $p<0.036$), H6 that perceived trust/image has a positive influence on attitude ($\beta=0.236$, $t=3.618$, $p<0.098$), thereby supporting H3, H4, H5 and H6 respectively.

For hypothesis H2 ($\beta=-0.045$, $t=-0.746$, $p<0.456$) and H7 ($\beta=0.041$, $t=0.735$, $p<0.463$) were insignificant. Table 16(Appendix D) shows the correlation between attitude and the seven variables where perceived image/trust (0.517) is strongly correlated, followed by perceived enjoyment (0.482), perceived service quality (0.480), perceived cost (.469), perceived usefulness (0.396) were all significant and moderately strong toward attitude. Perceived ease of use (0.384) and perceived

promotion offer (0.379) were non-significant and had both low correlations. The regression equation of the variables is:

$$Y = 15.450 + 0.175X1 - 0.039X2 + 0.149X3 + 0.138X4 + 0.119X5 + 0.214X6 + 0.041X7$$

Table 11: Results of the Hypotheses of the Study

Path	Hypothesis		Results
PU>A	H1	Perceived usefulness has a positive influence on the attitude of users towards adopting mobile VAS.	Supported
PEOU>A	H2	Perceived ease of use has a positive influence on the attitude of users towards adopting mobile VAS.	Not Supported
PC>A	H3	Perceived cost has a positive influence on the attitude of users adopting mobile VAS.	Supported
PSQ>A	H4	Perceived service quality has positive influence on the attitude of users adopting mobile VAS.	Supported
PE>A	H5	Perceived enjoyment has a positive influence on the attitude of users towards adopting mobile VAS.	Supported
PIT>A	H6	Perceived Image/Trust has a positive influence on the attitude of users towards adopting mobile VAS.	Supported
PPO>A	H7	Perceived promotion offer of mobile services has a positive influence on the attitude of users towards adopting mobile VAS.	Not Supported

4.2.1 Relationship between Stickiness and Attitude, Behaviour Intention and Actual Use.

Pearson Correlation coefficient was calculated between Stickiness as dependent variable and Attitude, Behaviour Intention and Actual Use as independent variables.

There is a significant positive correlation between Stickiness and Attitude towards adopting mobile VAS which is 0.394, $p < 0.01$ as shown in Table 17 (Appendix D). The coefficient of determination $R^2 = 0.362$, which means that 36.2% of the variance in stickiness can be explained by attitude. As shown in Figure 9, ($\beta = 0.602$, $t = 13.045$, $p < 0.001$). To test the relationship strength between Behaviour intention and attitude, a regression analysis was performed giving the regression equation as;

$$Y = 23.630 + 0.690X1$$

Table 18 (Appendix D) shows the regression summary.

From analysis in Figure 9, Pearson correlation between stickiness and behaviour intention shows that there is a significant positive correlation stickiness and behaviour intention which gives (0.366, $p < 0.01$). The determination coefficient $R^2 = 0.198$, which means that 19.8% of the variance in Actual Use can be explained by Behaviour intention. As shown in Figure 9, ($\beta = 0.445$, $t = 8.589$, $p < 0.001$) shows the significance. From the model summary in Table 18 (Appendix D), regression analysis was performed to test the strength of the relationship and the equation is;

$$Y = 37.851 + 0.416X1$$

With regards to actual use and stickiness, the Pearson correlation is positively significant between stickiness and actual use giving 0.566, $p < 0.01$. The determination coefficient $R^2 = 0.320$ means than 32% of the variance in Stickiness can be explained by Actual Use and ($\beta = 0.566$, $t = 11.808$, $p < 0.001$) (see Figure 9). From model summary in Table 18 (Appendix D), regression analysis was performed to test the strength of the relationship between the variables and regression equation is;

$$Y = 29.822 + 0.599X1$$

4.3 Discussion

In this study, an extended TAM model based on seven factors was formulated and tested. The research framework provides an understanding of the key factors that influence mobile VAS adoption. From the customer awareness point of view on mobile VAS, it was found that information mobile VAS was the most important category and this aligns with purpose of mobile phone usage. The results of this study suggest that information mobile VAS is more influential compared to the other categories. The most dominating mobile VAS in each category are; mobile data, mobile social networks, mobile browsing and M-Pesa transactions.

The relative importance of factors that influence mobile VAS in customer attitude dimensions would help mobile service providers to undertake necessary initiatives to improve these features that customer value the most. Our ranking (see Figure 8) indicates that perceived usefulness is the most dominant, followed by Perceived enjoyment, perceived cost, perceived ease of use, perceived service quality, perceived image/trust and lastly perceived promotion offer.

The results of regression analysis on Table 11 shows that perceived usefulness, perceived cost, perceived service quality, perceived enjoyment and perceived image/trust have positive and significant influence on customers attitude towards adoption of mobile VAS. The results of perceived service quality agree with research of customers perceived service quality in mobile phone industry (Joachim & Omotayo, 2008; Lai et al., 2007; Wang & Lo, 2002). The perceived ease of use and image and/or trust on influence on attitude are insignificant and thus service providers should ensure that mobile VAS provided should be easier to use and that they enhance

the image or trust of the customers. It is critical for mobile phone companies to honour their promises in fulfilling users' requirement (Negi et al., 2009).

In evaluation of relationship between stickiness and factors that influence it: attitude, behaviour intention and actual use show that they have positive and significant influence on customer stickiness. Further to note that their correlation between each is high and significant.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a summary of the study findings, conclusions and recommendations arising. It further concludes with limitations to the study and suggestions for further research.

5.2 Summary

This was cross-sectional type of study design and sought to address answers to the questions; What factors influence attitude towards mobile VAS adoption, and what is their influence on customer stickiness in Kenya? Information mobile VAS category was the most dominant compared to the other categories. All the hypothesis set forth were supported by the findings except perceived ease of use and perceived promotion offers.

5.3 Conclusions

The research findings indicate that the success of current and future mobile VAS is crucial to the operators as a source of revenue stream, differentiation and being dominant in the competitive market. Therefore there is need for mobile operators to evaluate and adopt various strategies so as to gain meaningful competitive advantage in this line of offering mobile VAS. In regards to awareness, mobile service providers should campaign for high usage of the various service offered. In line with the array of mobile VAS offered, Information is dominant followed by communication then

entertainment and transaction which I would say is still in infancy phase since not many customers have embarked on its usage. It is paramount for mobile service providers to engage in customer awareness of the various mobile VAS, this is seen from the low content aware on each individual service offering.

Perceived ease of use and perceived promotion offer are the factors that had no significant on attitude towards mobile VAS adoption. The competitive environment in the mobile VAS industry demands regular mobile customer assessment in order to tailor future services to meet customer requirements and change in demand. Perceived ease of use and perceived promotion offer is a concern to the operators since they directly influence adoption and thus should be enhanced.

Stickiness is influenced by attitude, behaviour intention and actual use and there are positive correlations

5.4 Recommendations

The results of the study reflect that mobile users play an important role in determining what kind of mobile VAS to be offered. The service providers should provide these services seamlessly. They should vigorously improve on promotion offers and ease of use. Creating strong customer awareness would eventually lead to customer stickiness. This should be in favor of acquiring new customers and retaining the existing ones therefore making the stick. Further, the mobile operator should should prioritize those factors that influence awareness and attitude towards mobile VAS. The results of this study suggests that customers should make an initiative to explore new and existing mobile VAS, this will enable them to be mobile VAS savvy.

5.5 Limitations of the Study

Despite the contributions of this study, there were some limitations. First, the study was based on quantitative data and no qualitative factors were included. Secondly, the findings could be biased since the study unit was students and teaching staff from the University of Nairobi, School of Business and not all the Kenya population. The TAM model used self-reporting data to measure actual use instead of real actual use data and this makes self-reporting data a subjective measure (Legris et al., 2003; Yousafzai et al., 2007).

5.6 Suggestions for Future Research

This study provides a basis to do similar research in other areas of technology adoption. Detailed study should be done by incorporating general population, since this was done to a limited study unit (students). This study research is open for further in-depth data analysis. It would also be important to conduct research on individual mobile VAS offering. Follow-up studies can be done using other research designs like longitudinal data to validate the proposed model.

By using the extended TAM proposed on this study, other factors can be added to find if there is any difference in adoption of mobile VAS. The results of the study provides a good basis to industry practioners and government to design appropriate framework and policies that would help in guiding mobile VAS industry. To the academics and institution, the results of the study gives a basis for future research on mobile VAS.

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APPENDICES

Appendix A: Examples of innovative Mobile VAS in growth markets

Country	Service provider	Service	Description
China	China Mobile	Rural Information Service	Provides weather forecasts and crop pricing information to farmers. Over 40 million mobile subscribers are using this service.
Kenya	Safaricom	M-Pesa	The service allows users to complete basic banking transactions on their mobile phones without the need for a bank account. Users register with an agent for an account that enables them to exchange cash for "e-money." The technology for the service is provided by Microsoft.
Turkey	Turkcell,Avea	Mobile Signature Service	Provides users with a "qualified electronic certificate" which they can use as their secure identification while carrying out transactions in an electronic environment. The mobile signature allows users to carry financial transaction and use online banking services from banks on their mobile phones.
China	China Mobile	Fetion	Mobile IM service with over 100 million registered users that can access the service via SMS, IVR and GPRS.
South Africa	MTN	Please Call Me	MTN currently offers 1 million "Please Call Me" messages a day to Project M (Masiluleke). Thereceiver of the SMS gets a short message with thephone number of the sender, indicating that thesender of the SMS wants them to call back. Theremaining characters in the SMS is used to
Nigeria	Globacom	Glo Caller Tune	Ringback tone service which allows users to download up to five different tunes and assign them to their different contacts/callers, or setup different tunes for different times of the day. Corporate users can have personalized caller tunes so that their callers can listen to different messages, or corporate jingles.
Bangladesh	GrameenPhone	CellBazaar	Offers a virtual mobile marketplace for users and enables them to trade a variety of goods.
South Africa	Mxit	Mxit	Most widely-used mobile social networking service in South Africa. The service platform has been extended into a range of new areas beyond simple mobile chat and IM features and a number of organizations are using the platform to deliver different services, including maths education, through a program backed by Nokia South Africa.

Source: Informa Telecoms & Media (2011)

Appendix B: Categories of Kenya Mobile Operators VAS

	Safaricom	Airtel	Orange	Yu
Communication	<ul style="list-style-type: none"> Voice Services: Flashback, Voicemails, Call waiting, Call hunting, Toll Free service, Data (2G,3G) Voice SMS Safaricom cloud (mobile cloud) Messaging-Semeni, Kipokezi, OkoaJahazi, MXit, MMS, Voice SMS 	<ul style="list-style-type: none"> Voice services Data (2G,3G,3.5G) MMS Voice SMS Web to SMS 	<ul style="list-style-type: none"> Voice Services Data (2G,CDMA,3G) CDMA MMS 	<ul style="list-style-type: none"> Voice services Data (2G, 3G) MMS
Entertainment	<ul style="list-style-type: none"> Music-skiza,IDJ, music on demand MMS Pictures Ringtones Games TV Caller RingBack Tone(CRBT) Mobile TV Mobile Social Networks-Facebook, Twitter 	<ul style="list-style-type: none"> Music-AirtelNgoma Ringtones-Hello Tunes Games TV Caller RingBack Tone(CRBT) Mobile TV Club 10 Mobile Social Networks-Facebook, Twitter Video streaming 	<ul style="list-style-type: none"> Music Ringtones Games TV Caller RingBack Tone(CRBT) Mobile TV Mobile Social Networks-Facebook, Twitter Comedies Music Videos Wallpapers Wise Quotes Inspirations 	<ul style="list-style-type: none"> Music-Dunda Ringtones Games TV Caller RingBack Tone(CRBT) Mobile TV Mobile Social Networks-Facebook, Twitter Peperusha chat DStv mobile Chats MMS imoved
Transaction	<ul style="list-style-type: none"> M-PESA Partners with Banks, Utilities, Supermarkets, Merchants Bonga Point Loyalty Programs 	<ul style="list-style-type: none"> Airtel Money Partners with Banks, Utilities, Supermarkets, Merchants Global Top up AirtelZawadi 	<ul style="list-style-type: none"> Orange Money-ikoPesa Partners with Banks, Utilities, Supermarkets, Merchants Orange Ziada 	<ul style="list-style-type: none"> Yu Cash Partners with Banks, Utilities, Supermarkets, Merchants Emergency Credit
Information	<ul style="list-style-type: none"> 411(Verses & Quotes, Horos, News, Wazup, SMSsokoni, Channels PRSPS Security 911 191 Directory Services Daktari 1525 	<ul style="list-style-type: none"> Airtel 911 Know it All PRSPs 	<ul style="list-style-type: none"> News Break Sport updates Encyclopedia Directory 	<ul style="list-style-type: none"> Yu zone infotainment *841#

(Source: Own Compilation from Operators Website)

Appendix C: Survey Questionnaire

Dear Respondent,

I am conducting a research at the University of Nairobi, School of Business for the study of adoption of mobile value added services. This questionnaire is designed to collect data from mobile subscribers. The collected data shall be used for academic purposes only, and thus shall be treated with strict confidence.

Your participation is deeply solicited in facilitating this study.

PART A: CUSTOMER PROFILE

Kindly indicate by ticking () appropriately in the space provided below.

1. **Gender** Male [] Female[]

2. **Age (Years)**

< 18yrs	18-25yrs	25-40yrs	40yrs& Above
[<input type="checkbox"/>]	[<input type="checkbox"/>]	[<input type="checkbox"/>]	[<input type="checkbox"/>]

3. **Highest Level of Education Attained**

Undergraduate	Postgraduate	Other(Specify)
[<input type="checkbox"/>]	[<input type="checkbox"/>]	

4. **Occupation**

Student	Public Sector	Private Sector	Self Employed
[<input type="checkbox"/>]	[<input type="checkbox"/>]	[<input type="checkbox"/>]	[<input type="checkbox"/>]

PART B: CUSTOMER AWARENESS OF MOBILE VALUE ADDED SERVICES

5. Kindly indicate by ticking () appropriately in the space provided below.

5.1 For how long have you been using your mobile phone?

< 1yr	1-2yrs	3-4yrs	4-5yrs	More than 5yrs
[]	[]	[]	[]	[]

5.2 Who is your main mobile service provider?

Safaricom	Airtel	Orange	Yu	Others (specify)
[]	[]	[]	[]	

5.3 If more than one please tick below the others providers

Safaricom	Airtel	Orange	Yu	Others (specify)
[]	[]	[]	[]	

5.4 Which type of connection are you using?

Prepaid [] Postpaid []

5.5 To what extent do you use the following mobile value added services applications? Please tick

	Service	Never	used once	Rarely	Always
Communication	Mobile Data/Internet	[]	[]	[]	[]
	Mobile Cloud Computing	[]	[]	[]	[]
	Voice SMS	[]	[]	[]	[]
	Mobile E-mail	[]	[]	[]	[]
	Others (Please specify)	[]	[]	[]	[]

Entertainment	Content Download:				
	Music	[]	[]	[]	[]
	Games	[]	[]	[]	[]
	Video	[]	[]	[]	[]
	Pictures	[]	[]	[]	[]
	Wallpaper	[]	[]	[]	[]
	Mobile TV (DStv)	[]	[]	[]	[]
	Mobile social Network(Facebook, Twitter)	[]	[]	[]	[]
	Chatting	[]	[]	[]	[]
	MMS	[]	[]	[]	[]
	TV Voting	[]	[]	[]	[]
	Others (please specify)	[]	[]	[]	[]
Transaction	Mobile Money:				
	M-PESA	[]	[]	[]	[]
	Airtel Money	[]	[]	[]	[]
	Yu Cash	[]	[]	[]	[]
	Orange Money	[]	[]	[]	[]
	Mobile Banking	[]	[]	[]	[]
	Payments	[]	[]	[]	[]
	Reservation	[]	[]	[]	[]
	Shopping	[]	[]	[]	[]
	Others (Please specify)	[]	[]	[]	[]
Information	Internet Browsing	[]	[]	[]	[]
	Search Services	[]	[]	[]	[]
	News Updates (Breaking, Sports)	[]	[]	[]	[]
	Health services	[]	[]	[]	[]
	Others (Please specify)	[]	[]	[]	[]

5.6 How did you come to know about the above services?

Advertisement	Operators promotions	Family & Friends	Internet	Others Specify
[]	[]	[]	[]	

**PART C: FACTORS THAT INFLUENCE USER ATTITUDE TOWARDS
MOBILE VALUE ADDED SERVICES**

6. Kindly indicate your feeling towards mobile value added services by ticking ()
appropriately in the space provided below

		Aspect of measurement	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
Perceived usefulness	6.1	Mobile value added services save me time	[]	[]	[]	[]	[]
	6.2	Mobile value added services improve my efficiency	[]	[]	[]	[]	[]
	6.3	Mobile value added services are useful to me	[]	[]	[]	[]	[]
	6.4	Mobile value added services enhance my daily activities	[]	[]	[]	[]	[]
	6.5	Mobile value added services provide me with valuable information	[]	[]	[]	[]	[]
Perceived ease of use	6.6	Mobile value added services are easier to use	[]	[]	[]	[]	[]
	6.7	Learning to operate mobile value added services is simple	[]	[]	[]	[]	[]
	6.8	Learning new mobile services is always easy	[]	[]	[]	[]	[]
	6.9	Mobile service user experience is straight forward	[]	[]	[]	[]	[]
	6.10	It is extremely easy to be familiarized with the use of mobile value added services	[]	[]	[]	[]	[]
Perceived cost	6.11	The cost of Mobile value added services are high	[]	[]	[]	[]	[]
	6.12	Mobile value added services are worthwhile to use	[]	[]	[]	[]	[]
	6.13	I think service providers should reduce the cost of mobile value added services.	[]	[]	[]	[]	[]
	6.14	Future mobile value added services will be cheap	[]	[]	[]	[]	[]
	6.15	Use of mobile value added services is cost effective	[]	[]	[]	[]	[]
Perceived service quality	6.16	Mobile value added services are reliable and connection quality is high	[]	[]	[]	[]	[]
	6.17	Mobile value added services give precise information and I can fully understand the content	[]	[]	[]	[]	[]
	6.18	Mobile value added services are regularly updated	[]	[]	[]	[]	[]
	6.19	Mobile value added services are always available	[]	[]	[]	[]	[]

	6.20	Mobile value added services offer fulfillment / Personalization	[]	[]	[]	[]	[]
Perceived enjoyment	6.21	Use of mobile value added services gives me pleasure	[]	[]	[]	[]	[]
	6.22	Using the mobile value added services makes me feel good	[]	[]	[]	[]	[]
	6.23	Mobile value added services help me to "kill time" or pass time	[]	[]	[]	[]	[]
	6.24	I enjoy interacting with mobile value added services	[]	[]	[]	[]	[]
	6.25	There is full enjoyment in using mobile value added services	[]	[]	[]	[]	[]
Perceived image/trust	6.26	I trust use of mobile value added services	[]	[]	[]	[]	[]
	6.27	Mobile value added services influence my image	[]	[]	[]	[]	[]
	6.28	Mobile value added service gives me a status	[]	[]	[]	[]	[]
	6.29	I am able to associate with mobile value added services	[]	[]	[]	[]	[]
	6.30	Use of mobile value added services are appealing	[]	[]	[]	[]	[]
Perceived promotion offerings	6.31	I find mobile value added services promotion offer appealing	[]	[]	[]	[]	[]
	6.32	Promotion offers of mobile value added services entices me	[]	[]	[]	[]	[]
	6.33	Promotion offers of mobile value added services are sometime a nuisance	[]	[]	[]	[]	[]
	6.34	Mobile value added service promotions are misleading	[]	[]	[]	[]	[]
	6.35	Mobile value added services promotions gives an edge compared to other services	[]	[]	[]	[]	[]

PART D: ATTITUDE, ADOPTION & STICKINESS TOWARDS MOBILE VALUE ADDED SERVICES

7. Kindly indicate your attitude, intention, actual use and stickiness towards mobile value added services by ticking () appropriately in the space provided below.

			Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
		Aspect of measurement					
Attitude	7.1	I think usefulness of mobile value added services would be an important factor	[]	[]	[]	[]	[]
	7.2	I think ease of use of mobile value added services would be an important factor	[]	[]	[]	[]	[]

	7.3	I think quality of mobile value added services would be an important factor	[]	[]	[]	[]	[]
	7.4	I think cost of mobile value added services would be an important factor	[]	[]	[]	[]	[]
	7.5	I think enjoyment of mobile value added services would be an important factor	[]	[]	[]	[]	[]
	7.6	I think Image/Trust of mobile value added services would be an important factor	[]	[]	[]	[]	[]
	7.7	I think promotion offer of mobile value added services would be an important factor	[]	[]	[]	[]	[]
	7.8	I think using mobile value added services is a good idea	[]	[]	[]	[]	[]
	7.9	All mobile value added services offered are good	[]	[]	[]	[]	[]
	7.10	Overall, I like the idea of mobile value added services	[]	[]	[]	[]	[]
Behavior intention	7.11	I think mobile value added service is more valuable and I intend to be using it	[]	[]	[]	[]	[]
	7.12	I plan to learn more mobile value added services offered	[]	[]	[]	[]	[]
	7.13	I plan to use mobile value added service in the future	[]	[]	[]	[]	[]
	7.14	If possible I will try to use mobile value added service more often	[]	[]	[]	[]	[]
	7.15	I will try to use mobile value added services in life or work	[]	[]	[]	[]	[]
Actual use	7.16	Cost do not inhibit the use of a mobile value added service	[]	[]	[]	[]	[]
	7.17	I am well informed about all the mobile value added services in the market and actually have used them	[]	[]	[]	[]	[]
	7.18	I do not see myself in the near future not using mobile added services	[]	[]	[]	[]	[]
	7.19	My sole purpose to using mobile value added services is transact. communication, entertain and getting information	[]	[]	[]	[]	[]
	7.20	Overall I am a higher user of mobile value added services	[]	[]	[]	[]	[]
Stickiness	7.21	I will not switch my current mobile service provider	[]	[]	[]	[]	[]
	7.22	I will keep using mobile value added service over and over again	[]	[]	[]	[]	[]
	7.23	I have high attachment with mobile services I am using	[]	[]	[]	[]	[]
	7.24	I am loyal towards mobile value added services	[]	[]	[]	[]	[]
	7.25	Generally speaking, I am stuck with the current mobile value added services offered	[]	[]	[]	[]	[]

Highly appreciated for your participation and contributions!

Appendix C: Introductory Letter



UNIVERSITY OF NAIROBI

SCHOOL OF BUSINESS

MBA PROGRAM

Telephone: 020-2059162/0711642416
Telegrams: "Varsity", Nairobi
Telex: 22095 Varsity

P.O. Box 30197
Nairobi, Kenya

DATE: 28/09/2012

TO WHOM IT MAY CONCERN

The bearer of this letter..... JOSEPHAT KIMANI KINYANJUI



Registration No..... D61/70007/2009

is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her course assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.



IMMACULATE OMANO
MBA ADMINISTRATOR
MBA OFFICE, AMBANK HOUSE

Appendix D: Statistical Results

Research Objective 2: Mobile VAS Provided by Operators and their uptake by customers

Descriptive Statistics amongst the Mobile VAS Categories and their uptake.

Table 12: Objective 2 Mobile VAS Categories and their Uptake

Category	Service	N	Mean	Std. Deviation
Communication	Mobile Data/Internet	310	3.67	.717
	Mobile E-mail	300	2.97	1.139
	Voice SMS	296	2.50	1.235
	Mobile Cloud Computing	271	1.82	1.092
Entertainment	Mobile social Network(Facebook, Twitter)	294	3.56	.928
	Chatting	291	3.28	1.100
	Music	292	3.14	1.109
	Pictures	290	3.09	1.066
	Wallpaper	280	2.88	1.193
	Video	290	2.85	1.146
	Games	293	2.70	1.187
	MMS	275	2.33	1.157
	Mobile TV (DStv)	271	1.66	1.077
	TV Voting	266	1.48	.883
Transaction	M-PESA	309	3.64	.843
	Payments	268	2.26	1.345
	Mobile Banking	268	1.98	1.224
	Shopping	261	1.59	.995
	Airtel Money	250	1.47	.974
	Reservation	252	1.47	.908
	Yu Cash	243	1.21	.646
	Orange Money	240	1.20	.675
Information	Internet Browsing	305	3.66	.805
	Search Services	281	3.21	1.079
	News Updates (Breaking, Sports)	282	2.64	1.270
	Health services	266	1.80	1.101

**Research Objective 3: Factors that Influence users Attitude towards
Mobile VAS**

Table 13: Objective 3 - Mean Score and Ranking

		Aspect of measurement	N	Mean	Std. Deviation
Perceived usefulness	6.1	Mobile value added services save me time	307	4.19	.956
	6.2	Mobile value added services improve my efficiency	305	4.23	.838
	6.3	Mobile value added services are useful to me	306	4.33	.801
	6.4	Mobile value added services enhance my daily activities	301	4.12	.886
	6.5	Mobile value added services provide me with valuable information	300	4.19	.880
Perceived ease of use	6.6	Mobile value added services are easier to use	305	4.04	.891
	6.7	Learning to operate mobile value added services is simple	301	3.88	.946
	6.8	Learning new mobile services is always easy	306	3.51	1.044
	6.9	Mobile service user experience is straight forward	305	3.35	1.124
	6.10	It is extremely easy to be familiarized with the use of mobile value added services	301	3.46	1.132
Perceived cost	6.11	The cost of Mobile value added services are high	283	3.70	1.043
	6.12	Mobile value added services are worthwhile to use	301	3.92	.940
	6.13	I think service providers should reduce the cost of mobile value added services.	298	4.30	1.054
	6.14	Future mobile value added services will be cheap	304	3.69	1.233
	6.15	Use of mobile value added services is cost effective	303	3.49	1.198
Perceived service quality	6.16	Mobile value added services are reliable and connection quality is high	303	3.44	1.157
	6.17	Mobile value added services give precise information and I can fully understand the content	304	3.58	.992
	6.18	Mobile value added services are regularly updated	303	3.56	1.056
	6.19	Mobile value added services are always available	303	3.35	1.117
	6.20	Mobile value added services offer fulfillment / Personalization	305	3.59	1.061

Perceived enjoyment	6.21	Use of mobile value added services gives me pleasure	304	3.81	1.039
	6.22	Using the mobile value added services makes me feel good	302	3.81	.949
	6.23	Mobile value added services help me to "kill time" or pass time	301	3.74	1.172
	6.24	I enjoy interacting with mobile value added services	302	3.96	.948
	6.25	There is full enjoyment in using mobile value added services	298	3.69	.987
Perceived image/trust	6.26	I trust use of mobile value added services	302	3.46	1.016
	6.27	Mobile value added services influence my image	299	3.22	1.135
	6.28	Mobile value added service gives me a status	296	3.17	1.201
	6.29	I am able to associate with mobile value added services	298	3.66	1.017
	6.30	Use of mobile value added services are appealing	299	3.76	.943
Perceived promotion offerings	6.31	I find mobile value added services promotion offer appealing	300	3.55	1.038
	6.32	Promotion offers of mobile value added services entices me	297	3.40	1.108
	6.33	Promotion offers of mobile value added services are sometime a nuisance	298	3.44	1.225
	6.34	Mobile value added service promotions are misleading	298	3.06	1.236
	6.35	Mobile value added services promotions gives an edge compared to other services	299	3.47	1.027
Attitude	7.1	I think usefulness of mobile value added services would be an important factor	298	4.05	.923
	7.2	I think ease of use of mobile value added services would be an important factor	296	4.10	.902
	7.3	I think quality of mobile value added services would be an important factor	298	4.21	.831
	7.4	I think cost of mobile value added services would be an important factor	298	4.12	.991
	7.5	I think enjoyment of mobile value added services would be an important factor	299	3.88	1.012
	7.6	I think Image/Trust of mobile value added services would be an important factor	300	3.85	1.005
	7.7	I think promotion offer of mobile value added services would be an important factor	295	3.91	.936

	7.8	I think using mobile value added services is a good idea	299	4.02	.960
	7.9	All mobile value added services offered are good	293	3.24	1.205
	7.10	Overall, I like the idea of mobile value added services	291	3.90	.927
Behavior intention	7.11	I think mobile value added service is more valuable and I intend to be using it	292	3.88	.917
	7.12	I plan to learn more mobile value added services offered	295	3.93	.910
	7.13	I plan to use mobile value added service in the future	291	3.88	.945
	7.14	If possible I will try to use mobile value added service more often	286	3.83	.973
	7.15	I will try to use mobile value added services in life or work	295	3.81	.950
Actual use	7.16	Cost do not inhibit the use of a mobile value added service	297	2.95	1.324
	7.17	I am well informed about all the mobile value added services in the market and actually have used them	299	3.27	1.166
	7.18	I do not see myself in the near future not using mobile added services	296	3.56	1.253
	7.19	My sole purpose to using mobile value added services is transact, communication, entertain and getting information	295	3.98	1.020
	7.20	Overall I am a higher user of mobile value added services	296	3.71	1.037
Stickiness	7.21	I will not switch my current mobile service provider	293	3.55	1.153
	7.22	I will keep using mobile value added service over and over again	288	3.87	.911
	7.23	I have high attachment with mobile services I am using	295	3.70	1.026
	7.24	I am loyal towards mobile value added services	293	3.56	1.051
	7.25	Generally speaking, I am stuck with the current mobile value added services offered	297	3.46	1.162

Table 14: Objective 3-Aggregate Mean Score

Variable	N	Mean	Std. Deviation
Aggregate-Perceived Usefulness	313	82.8626	14.81457
Aggregate-Perceived Enjoyment	304	75.3816	16.39083
Aggregate-Perceived Cost	308	73.8442	16.19190
Aggregate-Perceived Ease of Use	309	71.6893	17.12920
Aggregate-Perceived Service Quality	307	69.2769	16.56947
Aggregate-Perceived Image-Trust	303	68.1056	16.91708
Aggregate-Perceived Promotion Offerings	301	67.0831	15.06463
Aggregate-Information	308	65.8409	22.97238
Aggregate-Communication	314	64.9968	17.67157
Aggregate-Entertainment	314	61.8471	20.74096
Aggregate-Transaction	311	40.1672	17.04712
Aggregate-Attitude	302	74.0066	15.25029
Aggregate-Behaviour Intention	302	74.7152	17.49775
Aggregate-Actual Use	300	69.0400	16.17251
Aggregate-Stickiness	298	71.3691	16.58459

Table 15: Objective 3-Correlation Matrix for the Main Model

Variables	A	PU	PEOU	PC	PSQ	PE	PIT	PPO
A	1	.396**	.384**	.469**	.480**	.482**	.517**	.379**
PU		1	.388**	.371**	.367**	.383**	.296**	.276**
PEOU			1	.469**	.589**	.349**	.454**	.369**
PC				1	.466**	.412**	.410**	.361**
PSQ					1	.498**	.549**	.375**
PE						1	.600**	.465**
PIT							1	.543**
PPO								1

** . Correlation is significant at the 0.01 level (2-tailed).

Table 16: Objective 4-Correlation Matrix

Variables	S	A	BI	AU
S	1	.394**	.366**	.566**
A		1	.602**	.444**
BI			1	.445**
AU				1

** . Correlation is significant at the 0.01 level (2-tailed).

Table 17: Objective 3-Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate				
	.636 ^a	0.404	0.39	11.59577				
ANOVA								
Model		Sum of Squares	df	Mean Square	F	Sig.		
Regression		26349.989	7	3764.284	27.995	.000 ^b		
Residual		38859.493	289	134.462				
Total		65209.481	296					
COEFFICIENTS								
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		
	B	Std. Error	Beta			Lower Bound	Upper Bound	
(Constant)	15.45	4.603		3.36	0.001	6.391	24.509	***
Aggregate-Perceived Usefulness	0.175	0.052	0.176	3.35	0.001	0.072	0.278	***
Aggregate-Perceived Ease of Use	-0.039	0.052	-0.045	-0.75	0.456	-0.141	0.064	
Aggregate-Perceived Cost	0.149	0.052	0.159	2.86	0.005	0.046	0.251	**
Aggregate-Perceived Service Quality	0.138	0.057	0.155	2.43	0.016	0.026	0.249	*
Aggregate-Perceived Enjoyment	0.119	0.057	0.13	2.11	0.036	0.008	0.231	*
Aggregate-Perceived Image-Trust	0.214	0.059	0.236	3.62	0.000	0.098	0.331	***
Aggregate-Perceived Promotion Offerings	0.041	0.055	0.041	0.74	0.463	-0.068	0.149	
Significant Levels: *p<0.05; **p<0.01; ***p<0.001								

Objective 4: Relations between Variables

Table 18: Objective 4-Models Regression Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate				
1	.602 ^a	.362	.360	14.00015				
2	.445 ^a	.198	.196	14.50361				
3	.566 ^a	.320	.318	13.69685				
ANOVA								
Model		Sum of Squares	df	Mean Square	F	Sig.		
1	Regression	33356.253	1	33356.253	170.181	.000 ^b		
	Residual	58801.256	300	196.004				
	Total	92157.510	301					
2	Regression	15517.788	1	15517.788	73.770	.000 ^b		
	Residual	62685.732	298	210.355				
	Total	78203.520	299					
3	Regression	26158.665	1	26158.665	139.436	.000 ^b		
	Residual	55530.731	296	187.604				
	Total	81689.396	297					
Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	23.630	3.998		5.910	.000	15.762	31.497
	Aggregate-Attitude	.690	.053	.602	13.045	.000	.586	.794
2	(Constant)	37.851	3.727		10.157	.000	30.517	45.185
	Aggregate-Behaviour Intention	.416	.048	.445	8.589	.000	.321	.512
3	(Constant)	29.822	3.607		8.268	.000	22.723	36.920
	Aggregate-Actual Use	.599	.051	.566	11.808	.000	.499	.699
Significant Level: p<0.001 Models: 1-BI=f(A); 2-AU=f(BI); 3-S=f(AU)								