MOBILE COMMERCE AND ITS EFFECT ON THE WELFARE OF PEOPLE IN KENYA

CASE STUDY; M-PESA SERVICE FROM SAFARICOM

BY

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A RESEARCH REPORT SUBMITTED TO THE SCHOOL OF BUSINESS AND MANAGEMENT IN PARTIAL FULFILMENT FOR THE AWARD OF A DEGREE OF BACHELORS OF INTERNAIONAL BUSINESS ADMINISTRATION OF KAMPALA INTERNATIONAL UNIVERSITY

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DECLARATION

This my original work and has not been presented for any study programme in any university.

5/12/08.

NDISI DENNIS ISAIAH **DATE**

APPROVAL

This dissertation has been submitted for examination with my knowledge as the

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ABSTRACT

In Kenya 60% of the total population either own a mobile phone or use telecommunication services on a daily basis. Currently, there are three service providers in the country namely, Safaricom, Celtel and Telkom Kenya. The publication is tested on a mobile commerce initiative by Safaricom Kenya. The initiative is called M-pesa and it allows mobile users to transfer money from one person to the other, using mobile phones and cellular technology as the operating infrastructure.

The report specifically looks why more and more Kenyans are opting to use M-pesa to send money and even pay their bills, other than using banking services to do the same. The research identifies the effect of mobile commerce on the people of Kenya especially in both the rural and urban settings in Kenya.

The publication identifies why M-pesa service is a key factor towards Safaricom competitive advantage, and why the company has maintained its customer loyalty.

The primary data is collected through the use of questionnaires. The data is then analyzed and results together with their interpretations are then provided.

The research is conducted in Nairobi the capital city of Kenya, where Safaricom limited is located. The research especially through questionnaires is conducted in the rural areas of Kenya such as Kerugoya, Kisumu and Narok.

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LIST OF ABBREVEVIATIONS AND ACRONYMS

CCK	Communications commission of Kenya
CDMA	Code Delivery Multiple Access
DFID	Department of International Development
DOI	Diffusion of Innovations theory
M-pesa	Money transfer service offered by Safaricom
MDG	Millennium Development Goals
TALC	Technology Adoption life cycle
TAM	Technology Acceptance Model
TPB	Theory of planned Behavior
TRA	Theory of Reasoned Action
M-Commerce	Mobile Commerce

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CHAPTER ONE
INTRODUCTION

1.O INRODUCTION

Mobile commerce is defined as the participatory transaction mode whose technology employs mobile telephony and cellular networks. The mobile commerce technology has created a significant way of enabling mobile users to have services of money transfer through out the country. This service was introduced as a world's first by Safaricom limited in march 2007.the m-pesa service recoded an impressive 175,000 customers in the first three months of operation.

Research conducted in the period between March 2007 and may 2007 indicate more than 2,500 signing up of customers everyday (WRI; 2007). It is from this proposition that the research is conducted to find out the impact of mobile commerce technology on the welfare of the Kenyan population.

1.1 BACKGROUND

In all economies in the world, transactions are made possible by the monetary exchange of an acceptable medium in return for goods and services. 1850 to 1950 time period saw the decline of barter trade to the use of money as a preferred mode of transacting in African countries (Ajanta:1983). Colonial commercial systems paved the way for capitalism to penetrate Africa, and since then, money has been the most widely adopted mode (Maxon: 1992). The characteristics that led to adoption of money include barter trades, the lack of common measure of value, inaccurate divisibility, unpredictable demand and supply of goods, difficulties in commodities acting as a store of value and finally in making differed payments. (Kisimbii; 2002).

Money has since then been developed and now takes generally two forms namely cash and non-cash money. Today, money plays an integral role in the proper economic functioning of any society. Without money, all economies in the world would come to a stand still. This is due to the role it plays in acting as a means of deferred payment and an indicator of purchasing power.

With the advent of computer networks, cash and non-cash money can now be instantaneously transferred electronically from one place to another over variable distances. This fundamental principle has influenced the adoption of M-Commerce technology. This has had an impact on reducing the need of being physically present in order to transact

In 2007, Safaricom the leading mobile telephone service provider in Kenya launched M-pesa. This service allows users to transfer money using mobile telephony over cellular networks. Kenya is the first country to use this service. This service is available through partnership is available through the partnership of Safaricom and Vodafone. The department of International Development (DFID) made the fund for the pilot implementation available. The project manifests itself thematically in the Millennium

Development Goals (MDG's) under the two pillars of poverty eradication and creation of partnership for development.

This research analyses consumer subjectivity towards the M-pesa service as a preferred fund transfer mode and its impact on the welfare of the people in Kenya.

1.2 AREA OF THE STUDY

The area of the study was Safaricom Kenya limited, the focus will be on its headquarters which is based in westlands, Nairobi, and the company is a mobile phone service provider and also offers M-pesa services.

1.3 PROBLEM STATEMENT

The problem was to fill the research gap that exists between M-commerce advancement and society's behavioral responses.

This research tested the derived model on the M-pesa service introduced by Safaricom Kenya.

1.4 GENERAL OBJECTIVE

To find out the extent as to which M-commerce has influenced the consumers in Kenya and why more Kenyans opt to use M-Pesa to send funds instead of banking services.

1.5 SPECIFIC OBJECTIVES

- To study consumer attitudes towards M-commerce.
- To study subjective norms of referent persons with regard to use of M-commerce.
- Extend the findings to derive the disruptive index.

1.6 RESEARCH QUESTIONS

1. What are the effects of using M-pesa as a means of payment?
2. How does M-pesa rate its ability to act as a store of value?
3. What is the attitude of Kenyan's using M-pesa it as means of acting and paying back debts?

4. How would you compare M-pesa to other services in sending money?
5. Would you think of yourself as having money if you have it in M-pesa format?

1.6 SCOPE OF THE STUDY

This research covers the branch of business that is responsible for facilitating financial transactions. The methodology's objective is to investigate subjective factors that lead to adoption of Mobile commerce. The envisaged full adoption would make M-commerce the preferred means of financial transacting. The methodology specifically places emphasis on mobile- based commerce and its effect on the welfare of people in Kenya.
Since subjective norms take time to develop, the scope therefore examines both past and existing transaction modes. This is vital to the study because it provides a foundation for better understanding of how existing norms influence the transaction modes used today.

1.7 THEORETICAL FRAME WORK

The conceptual framework refers to the definition of the topic through the explanation of variables. We have the dependant variable, the independent variable which determine, predicts and control the dependant.

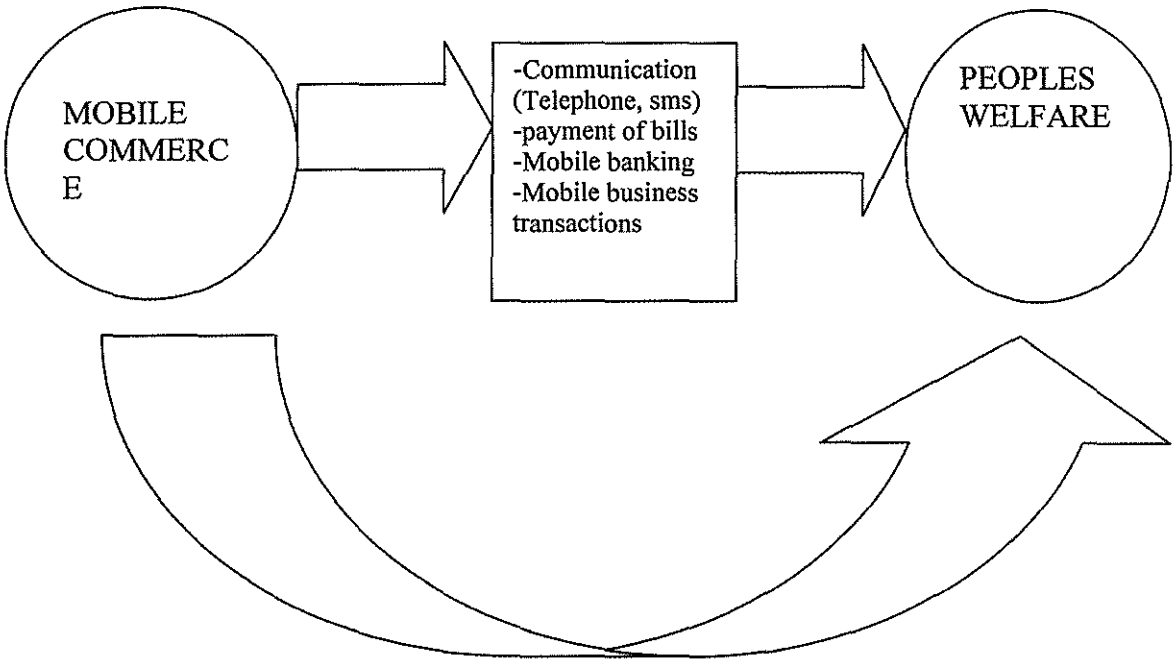
For the purposes of this research the dependent variable is the people's welfare which is affected by the independent variable which in this case is Mobile commerce.

1.1 CONCEPTUAL FRAMEWORK MODEL

INDEPENENT VARIABLE

DEPENDENT VALIABLE

Table 1.1



CHAPTER TWO
LITERATURE REVIEW

2.0 INTRODUCTION

Theoretic and empirical data are both contained in this literature review. The first part reviews detailed literature on mobile penetration in Kenya. This is important since it gives an elaborate overview on the usage of mobile technology by the people of Kenya. The literature review will also focus on E-commerce as the preceding technology in the electronic consumer transaction systems and how it led to the emergence of m-pesa.

The second part will focus on M-pesa service and how it works. This will enable us to really know its operability and how it has influenced the day to day lives of the people living in Kenya.

The research testing takes form of a case study on M-commerce and its effect on the welfare of people in Kenya. The object in consideration is the M-pesa service by Safaricom. The study takes and adopter-centric approach.

2.1 MOBILE COMMERCE

Mobile commerce can be defined as any transaction with monetary value that is conducted via a mobile telecommunications network (Durlacher; 1999). For the purpose of this research the definition is significant for the monetary exchange transacted upon cellular networks.

M-commerce being a relatively new phenomenon in the world faces one major limitation being the lack of standards in terms, concepts and theories. (Okazaki; 2005, loanna). This research therefore borrows from E-commerce since E-commerce and M-commerce share the same basic fundamental principles.

Traditional commerce has been used to lay the basic foundations of mobile commerce that is buyers and sellers come together to exchange goods and services for money. But instead of conducting business that way, in Electronic commerce buyers and sellers transact business using the cellular networks. Just like E-commerce, M-commerce offers buyers convenience. The buyers can make inquiries and purchases, without having to leave their homes or offices (O'brien; 2002). The contrasting element is that E-Commerce was done using computers over computer networks while M-commerce is done using mobile devices over cellular networks.

The rise of internet-enabled mobile phones has rapidly achieved worldwide penetration, due to the fact that it is very personal in nature and uses sophisticated communication technologies. However, unlike E-commerce research, empirical explorations of m-commerce has seen modest growth because of the considerable uncertainties involved in mobile research.

2.1.1 M-COMMERCE ADVANTAGES

Mobile commerce being a relatively new phenomenon provides numerous benefits to the consumers especially in the Kenyan market. The most prominent include the following.

- Localization of services- the mobile services can be customized to suit a particular region, or operating environment to complement many given transactional or organizational scenario. In Kenya, for example M-Pesa means is derived from the Swahili word, whereby Pesa means money. Signifying mobile money, the language has been localized since Swahili is the national language in Kenya.

- Reachability- this is made possible due to the high penetration rates and also because the technology operate on open standards thus a very high compatibility among various mobile products, for example, the purchase of airtime from the M-pesa account any time of the day or night without any added costs.

- Mobile devices are more personal- every individual in Kenya can have his or her phone adjusted with services to suit his or her lifestyles. For example, the language on the mobile phone can be changed from English to Swahili to suit the mobile user preference.

2.1.3 FUTURE CAPABILITIES THAT CAN BE OFFERED

- Development of more open standard connectivity options- for example, Wireless Access Protocol (WAP), Code Delivery Multiple Access(CDMA), Bluetooth- a connectivity standard that enables mobile phones to transmit data from one phone to another without any intermediation of the mobile service providers.

- MMS- this service enables mobile service users to send and receive multi-media messages using their mobile phones. For example I can take a picture of the source of the river Nile here in Uganda using my camera phone and send the

picture to my friend using his camera enabled phone in Kenya using the MMS service.

- High quality 3G phones- these phones create the opportunity for users to capture create and share high quality sound, video and data.

2.2 MOBILE PENETRATION IN KENYA

Mobile commerce in this research is referred to as M-commerce has created an unprecedented means of technologically enabled financial transfers not only in Kenya but globally. This phenomenon is partially driven by the absence of well adopted E-commerce solutions especially in developing countries. Africa is the fastest growing mobile market in the world. The continent's subscriber base grew to over 137 million in 2005 and a majority share captured by GSM mobile users (Africa Wired: 2007)

Kenya's telecommunications industry is regulated by the autonomous Communications Commission of Kenya (CCK) it was founded in 1997. The commission has the main role of overseeing, licensing and regulating players in the industry (CCK: 2007). Over the past 11 years, the country has been keen to put in frameworks to ensure the growth of the telecommunication sector. The telecommunication policy framework was launched in 1999, and the regulator was established in 1999 with the most recent amendments being those made in 2002. (ITU; 2007).

As a result of the rapid growth strategy by the industry regulators, only two mobile phone service providers are operating in the country namely Safaricom and Celtel (Olunga: 2007). This has created intense competition between the two service providers. Even though costs are high (Chege 2002). For companies to remain competitive, they sought to offer numerous value added services.

Kenya is now a recipient of revolutionary practices offered through mobile communications. Value added services include short message service (SMS), internet browsing on handsets, Multimedia messaging services (MMS) and infomediary services,(Celtel, Safaricom; 2007. These services move congruently with the development of the technological capabilities of the devices. Among the most widely used cellular connection standards include:-CDMA, GSM each having its own unique advantages.

However, since more urban subscribers are abased within the urban center's, Government sub inventions and licensing obligations have led the service providers have endeavored to create higher national penetration by introduction of community phones locally known as "simu ya jamii"(ADMI; 2007). This created higher opportunity for penetration up to areas where a number of mobile phone owners are low or where individuals are economically challenged to afford personal mobile phones (ADMI: 2007). They serve the community and are owned and operated through agency to the service providers.(2007).

Kenya and Africa as a whole operate upon the GSM which is the standardized communication protocols by the mobile operators. This standard offers a robust network in Kenya. (Carlsson: 2006).

Kenya's need for computer based and telephony based is mainly driven by need for communication as the main catalysst. These needs have been largly under-served by the landline phone systems which have recently recorderd a drop in the number of fixed line telephone connections between 200 and 2005, from 313,470 to 281,764(CCK: 20005). The drop in fixed line ownership can be attributed to the slack performance of the only fixed line company, TELKOM Kenya. Thus the mobile phone is a timely solutin to fill the communication options divide (Wachira: 2007).

The mobile service customers are served by Kenya's two mobile service providers- Safaricom and Celtel. Safaricom is ranked 10th in Africa in terms of subscriber base. (Africa Wired: 2007).

Comparatively, internet penetration stands at 1,111,000 users as at March 2007. This represents 3.2% of the population. (Internet World Statistics: 2007). E-commerce payment methods is largely constricted by the small number of E-commerce enabled credit cards (Chege: 2002).

E-commerce as a mode of payment first developed in countries with sufficient economic and technical resources (Travica 2002), countries that are less developed followed at variable paces(Ein-Dor et al: 1999). Kenya is among one of the laggard countries in terms of E-commerce adoption. E-commerce though is not the focus of this research, instead the concentration will be on mobile based payment systems.

2.3 DEVELOPMENT OF E-COMMERCE AS A PRECEDENT FOR M-COMMERCE

Due to the newness of M-commerce, there is a current lack of standardized literature, thus since M-commerce share characteristics with E-commerce. Literature from E-commerce is adopted into this research with the aim of providing a holistic understanding of the M-commerce tributary of business.

Electronic commerce, commonly known as E-commerce, consist of the buying and selling of products and services over the electronic systems such as the internet and other computer networks. The amount of trade conducted electronically has grown dramatically since the wide introduction of the internet(Wikipedia: 2007).

A wide variety of commerce is conducted in this way, including things such as electronic funds transfer, supply chain management-marketing, online marketing, online transaction

processing, electronic data interchange (EDI), automated inventory management systems, and automated data collection systems. Modern electronic commerce typically uses the World Wide Web at least at one point in the transaction's lifecycle, although it can encompass a wider range of technologies such as E-mail as well(O'Brein: 2002).

2.3.1 STRATEGIES FOR SUCESSFUL E-COMMERCE MANAGEMENT

In many cases, an E-commerce company will survive not only based on its product, but by having a competent management team, good post-sales services, well organized business structure, network infrastructure and a secured, well designed website. A company that wants to succeed will have to perform two things; Technical and organizational aspects and customer oriented services (Wikipedia: 2007).

The following factors will make the business of companies succeed in E-commerce;

- Sufficient work done in market research analysis. E-commerce is not exempt from good business planning and the fundamental laws of supply and demand. Business failure is as much a reality in E-commerce as in any other form of business.

- A good management team armed with information technology strategy. A company's IT strategy should be part of the business re-design process.

- Providing an easy and secured way for customers to effect transactions. Credit cards are the most popular means of sending payments on the internet, accounting for 90% of online purchases. In the pats, card numbers were transferred securely between the customer and merchant through independent payment gateways are still used by most small and home businesses. Most merchants today process credit card transactions on site through arrangements made with commercial banks or credit companies.

- Providing reliability and security. Parallel servers, hardware redundancy, fail-safe technology, information encryption, and firewalls can enhance this requirement.

- Providing a 360-degree view of the customer relationship, defined as ensuring that all employees, suppliers and partners have a complete and same view of the customer.

- Constructing a commercially sound and practical business model.

- Engineering an electronic value chain in which one focuses on a "limited" number of core competencies, the opposite of a one-top shop.(Electronic stores can appear as either specialist or generalists if properly programmed.)

- Operating on or near the cutting edge of technology and staying there as technology changes (but remembering that the fundamentals of commerce remain indifferent to technology).

- Setting up an organization of sufficient alertness and agility to respond quickly to any changes in the economic, social and physical environment.

- Providing an attractive website. The tasteful use of color, graphics, animation, photographs, fonts, and white –space percentage may aid success in this respect.

- Streamlining business processes, possibly through re-engineering and information technologies.

- Providing complete understanding of the products or services offered which not only includes complete product information, but also sound advisors and selectors.

Naturally, the e-commerce vendor must also perform such mundane tasks as being truthful about its products and its availability, shipping reliably, and handling complaints promptly and effectively. A unique property of the internet environment is that individual customers have access to far more information about the seller than they would find in a brick and mortar situation.

2.3.2 EFFECTS OF E-COMMERCE ON THE BUSINESSS WORLD

Internet is creating new business models. Customers can find vast information about products and services. Customers can bypass retail outlets and buy directly from suppliers. Internet is reducing the costs of developing, sending and storing information.(O'Brein:2002).

The computerization of business has led to many changes in the way business is done and managed. Among the most prominent changes include:-

- Automation of tasks
- Job layoffs and the increase demand for multi-skilled staff.
- Better customer care services by establishing call centers and information about products and services.
- Round the clock service.
- More customer participation in the value chain.
- Demand for round the clock service-24 hour service (Wikipedia: 2007)

2.3.3 CHALLENGES IN MANAGING AN E-COMMERCE VENTURE

Traditional dispute resolution mechanisms cannot address e-commerce complexities (Mbaziira: 2006).

Even if a provider of E-commerce goods and services rigorously follows these "key factors" to devise an exemplary e-commerce strategy, problems can still arise. Sources of such problems include:-

- Failure to understand customers, why they buy and how they buy. Even a product with sound value proposition can fail if producers and retailers do not understand customer habits, expectations and motivations. E-commerce could potentially mitigate this problem with proactive and focused marketing research, just as traditional retailers may do.

- Failure to consider the competitive situation. One may have the will to construct a viable book E-tailing business model, but lack the capability to compete with. (Amazon.com).

- Inability to predict environmental reaction. What will competitors do? Will they introduce competitive brands or competitive web sites? Will they supplement their service offerings? Will they try to sabotage a competitor's site? Will price wars break out? What will the government do? Research into competitors, industries and markets may mitigate some consequences here, just as in non-electronic commerce.

- Over-estimation of resource competence. Can staff, hardware, software and processes handle the proposed strategy? Have e-retailers failed to develop employee and management skills? These issues may call for thorough resource planning and employee training.

- Failure to coordinate. If existing reporting and control relationships do not suffice, one can move towards a flat, accountable, and flexible organizational structure which may or may not aid coordination.

- Failure to obtain senior management commitment. This often results in a failure to gain sufficient corporate resources to accomplish a task. It may help to get top management involved right from the start.

- Failure to obtain employee commitment. If planners do not explain their strategy well to employees, or fail to give employees the whole picture, then training and setting up incentives for workers to embrace the strategy may assist.

- Underestimation of time requirements. Setting up an e-commerce venture can take considerable time and money, failure to understand the timing and sequencing of tasks can lead to significant cost overruns.

- Failure to follow a plan. Poor follow-through after the initial planning and insufficient tracking of progress against a plan can result in problems. One may mitigate such problems with standards tools, benchmarking, milestones, variance tracking and penalties and rewards for variances.

- Becoming the victim of organized crime. Many syndicates have caught on to the potential of the internet as a new revenue stream. Two main methods are as follows; (1) using identity theft techniques like phasing to order expensive goods and bill them to some innocent person, then liquidating the goods for quick cash;(2) exhortation by using a network of computerized "zombie" computers to engage in distributed denial of service attacks against the target Web site until it starts paying protection money.

- Failure to expect the unexpected. Too often new businesses do not take into account the amount of time, money or resources needed to complete a project and often find themselves without the necessary components to become successful.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 INTRODUCTION

The research design takes an empiricist approach. This is derived from empiricist school of thought which state that all we can ever know is that which is accessible to us through experience.

3.1 RESEARCH DESIGN

The primary research data is collected using questionnaires in a field study. It is guided by procedures put forth in the theory of Reasoned Action. In addition, an alternative hypothesis is generated by including an extraneous variable to the TRA. This derived generic model is then used to test the probability of adoption of M-commerce in Nairobi, Kenya. The sociological product that forms the study base is attitudes and subjective norms towards the test object.

3.2 TARGET POPULATION

The research targets people who are users of the M-pesa service. The target areas are Nairobi, Eldoret and Kerugoya. This target population is selected because they have a factual basis for making judgment on the service because they have used the service to send and receive money. This is because non-users would have no basis for making responses.

3.3 SAMPLING PROCEDURES

The research employs non probability convenience sampling. Questionnaires were distributed to the respondents. The questionnaires are close ended and a representative sample of 60 respondents was selected. This number was deemed convenient by the researcher to test the effectiveness of the developed generic model.

3.4 METHODS OF DATA COLLECTION

Primary data is collected through research questionnaires. The questionnaire contains 10 closed ended and 1 open ended questions. The respondents tick the response that is closets to what they perceive. The responses are filled on spaces provided in the questionnaire. The responses from the primary data are used in the research.

3.5 PROCEDURES OF DATA COLLECTION

The researcher guides the respondents through the process of filling the questionnaire.

3.6 DATA ANALYSIS

The process of data analysis follow the methodology put forth by Azjen and Fishbein to conduct the data analysis of the altitudinal and subjective norms of the users and the referent persons respectively. The process of arriving at the required data is outlined below.

3.6.1 ATTITUDE TOWARDS BEHAVIOR COMPONENT

STEP 1: Elicit adopter's salient beliefs about behaviour. A small number of beliefs are considerd- perhaps five to nine – that a person can attend to at any given moment(Ajzen et al: 1980).

STEP 2: Measure how a subject evaluates the outcome of each salient belief using a seven point, good-bad scale as shown below. The salient beliefs in this research are drawn from the acceptable characteristics of money

Table 3.6.1

Extremely good	Quite good	Slightly good	Neither good or bad	Slightly bad	Quite bad	Extremely bad
+3	+2	+1	0	-1	-2	-3

Step 3: Measure belief strength by asking the subject to indicate the likelihood that performing a behavior will result in a given outcome. The research employs the below design

Table 3.6.2

Not at all certain	Slightly certain	Quite certain	Extremely certain
0	+1	+2	+3

Step 4; The product of each respondent shall be averaged so as to come up with an average response. The outcome will be used to predict the subject's attitude.

3.6.2 DETERMINANTS OF SUBJECTIVE NORMS COMPONENT

STEP 1: Elicit adopters' salient referents with regard to the behavior.

STEP 2: Measure normative beliefs measured by a seven (7) point scale shown below.

My referent person 1 thinks

I should +3 +2 +1 +0 -1 -2 -3 **I should not**

Use M-pesa to send money

STEP 3: Measure subjects motivation to comply by asking how much their referent persons think they should perform the behavior.

I am

Not at all certain	Slightly certain	Quite certain	Extremely certain
0	+1	+2	+3

That referent person 1a expects me to comply with the expected behaviour

Step 4: The responses from all respondents shall be averaged so as to come up with the average responses. The outcome will be used to predict the subjects' attitude.

3.6.3 DISRUPTIVE INDEX

The generic model provided by this research is formed by introducing an extraneous variable to the TRA model. This measure is referred to as the disruptive index. It intends to establish the limits to which consumers may want to see as a general adoption because 100% adoption is still far-fetched idea. Factors that affect 100% adoption are numerous including-

3.6.3.1 METHODOLOGY

The index elicits adopter and referent person's likelihood of 100% adoption by extending the use of M-pesa to include the anticipated behavior of using M-commerce to pay for goods and services.

The outcome is multiplied by the total outcome of part 1 and part 2. The resultant figure is then converted to 100% scale. This outcome lets us know the probability of the behavior of using M-commerce can replace the use of money in Kenya economy based on the extension of the TRA model and the findings in part 1 and 2.

3.6.4 FURTHER DATA ANALYSIS

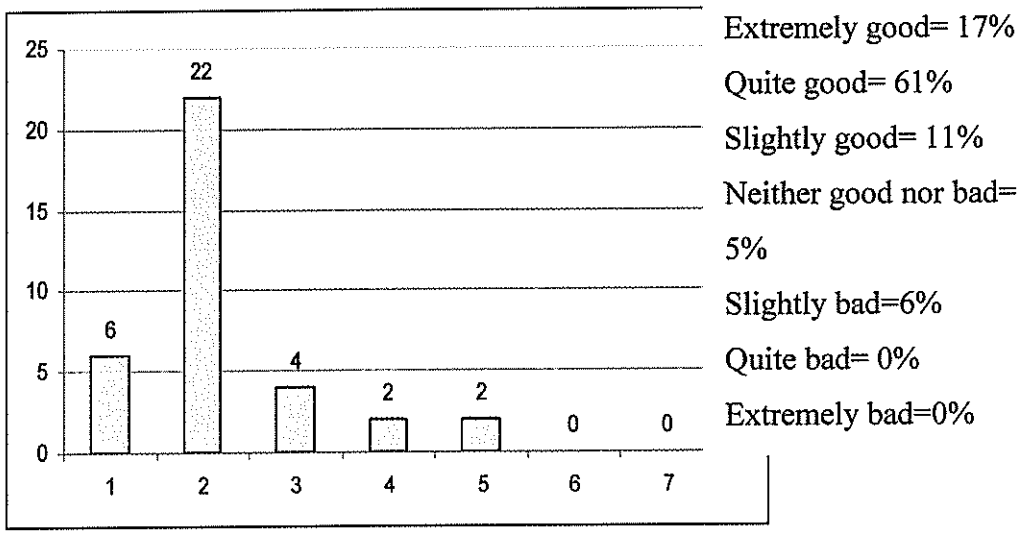
Responses from the questionnaires are then computed using Microsoft Excel. The use of the software does not in any way alter the results form the questionnaires, it only acts to automate and simplify the task of data analysis.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 ATTITUDE COMPONENT

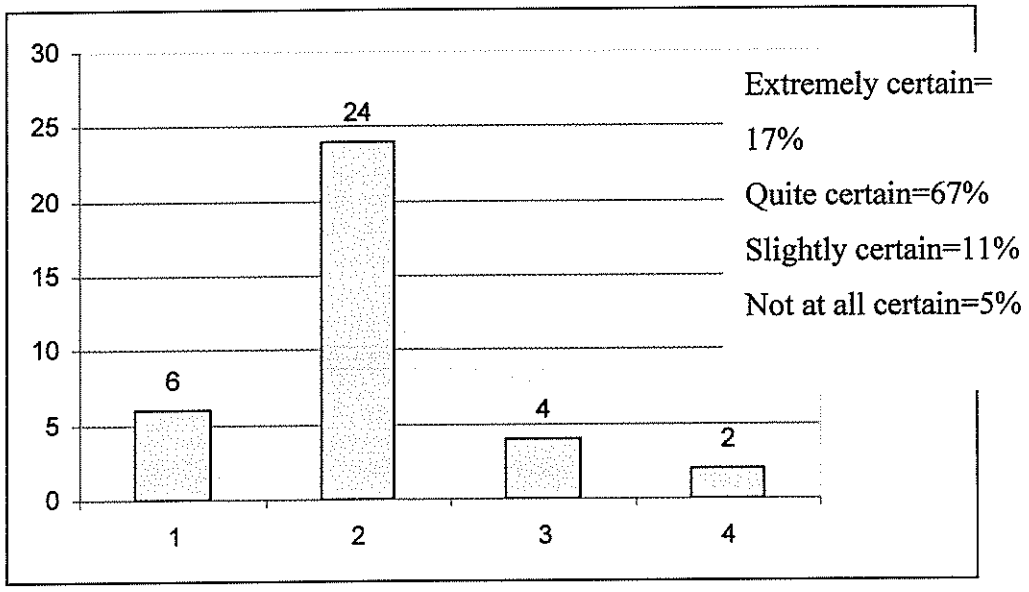
4.1.1 USAGE AS A MEANS OF PAYMENT



The study was conducted on 36 people of which out of the 36 six people responded that M-pesa was extremely good which represent 17% of the population of study, 22 people of the 36 said that M-pesa was quite good which represents 61% of the study population. 4 out of the 36 people said that M-pesa was slightly good representing 11% of the study population.

5% of the population were not decided if m-pesa was neither good nor bad. None of the population gave remarks whether it was slightly bad, quite bad or extremely bad.

DECISION STRENGHT OF '1A' Above



The study was conducted on 36 people of which out of the 36 six people responded that they were extremely certain which represent 17% of the population of study, 24 people of the 36 said that they were quite certain which represents 67% of the study population. 11 out of the 36 people said that they were slightly certain representing 11% of the study population.

5% of the population were not at all certain in using m-pesa.

ATITTUDE		STRENGTH
MEAN	1.777778	1.944444
MEDIAN	2	2
MODE	2	2
S. Dev	0.988826	0.71492

Tally	3	2	1	0	-1	-2	-3
A	6	22	4	2	2	0	0
B	6	24	4	2			

4.1.1.1 FINDINGS

A medium of exchange or payment is an intermediary used in trade. An effective medium should have the following characteristics:

- It should also be recognizable as something of value. A person A should recognize the value of the item so that person B can give it to A in exchange for goods or services.
- It should be easily transportable; precious metals have a high value to weight ratio. Paper notes have proved highly convenient in this regard.
- It should be durable.

4.1.1.2 INTERPRETATION

The average result from this question was 1.78 out of a 7- point scale. This can be rounded off to 2 for purposes of evaluation based on the TRA. This figure represents a positive attitude.

A large proportion (61%) of the respondents said that M-pesa is quite good when used as a means of payment. In term decision strength, 67% were quite good when used as a means of payment. In term decision strength, 67% were quite certain with the responses they gave.

The median and the mode response also stood at 2, with a standard deviation of 0.99.

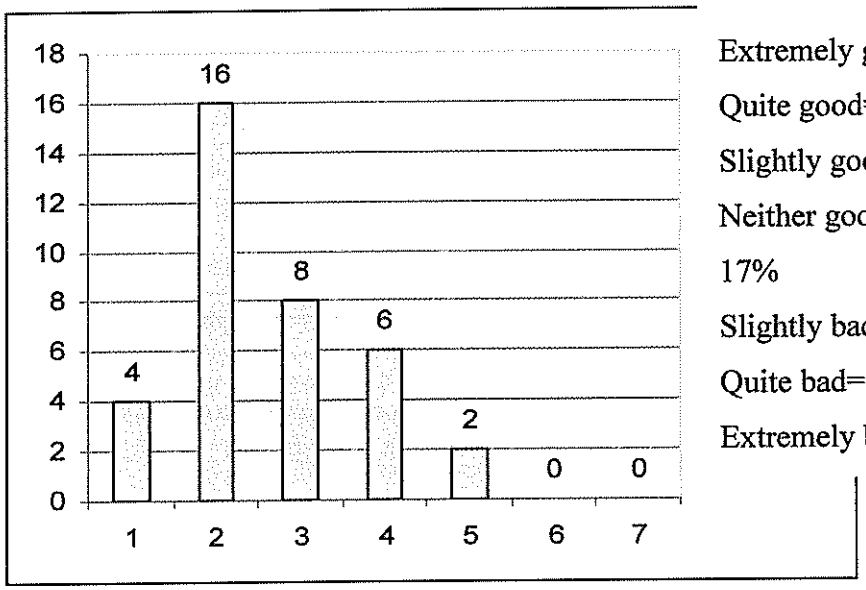
4.1.1.3 CALCULATIONS

Adoption probability= Mean x disruptive index

= 1.78x0.611

= **1.0875**

4.1.2 USAGE AS A STORE OF VALUE



Extremely good= 11%

Quite good= 44%

Slightly good= 22%

Neither good nor bad= 17%

Slightly bad=6%

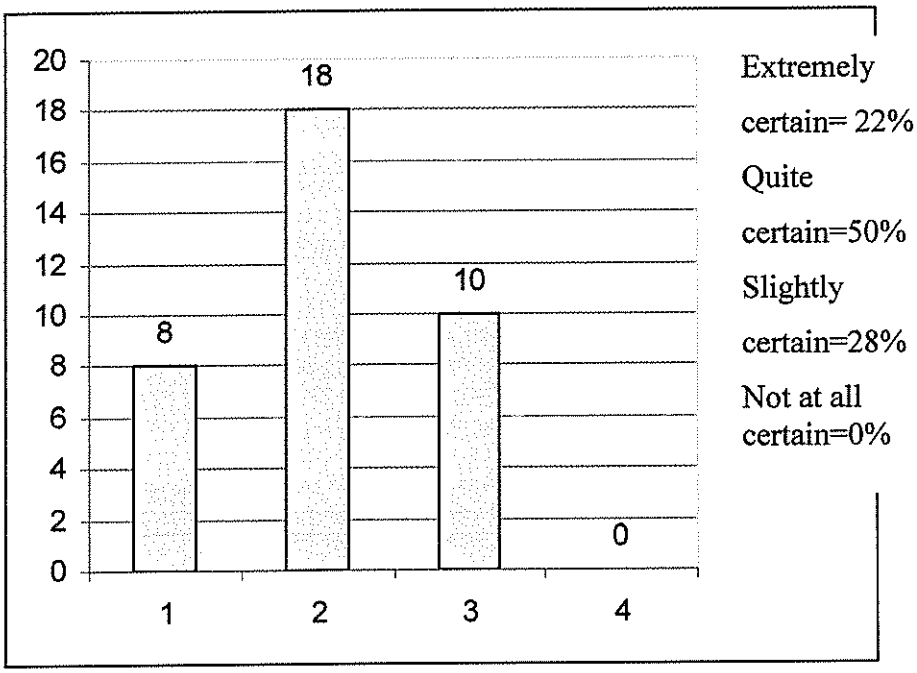
Quite bad= 0%

Extremely bad=0%

The study was conducted on 36 people of which out of the 36 six people responded that M-pesa was extremely good which represent 11% of the population of study, 22 people of the 36 said that M-pesa was quite good which represents 44% of the study population. 4 out of the 36 people said that M-pesa was slightly good representing 22% of the study population.

6% of the population were not decided if m-pesa was neither good nor bad. None of the population gave remarks whether it was slightly bad, quite bad or extremely bad.

Decision strength of 2a above



The study was conducted on 36 people of which out of the 36 eight people responded that they were extremely certain which represent 22% of the population of study, 18 people of the 36 said that they were quite certain which represents 50% of the study population. 10 out of the 36 people said that they were slightly certain representing 28% of the study population.

0% of the population were not at all certain in using m-pesa

	Attitude	strength
Mean	1.388889	1.944444
Median	2	2
Mode	2	2
S.Dev	1.076443	0.71492

Tally	3	2	1	0	-1	-2	-3

A	4	16	8	6	2	0	0
B	8	18	10	0			

4.1.1.1 FINDINGS

To act as a store of value, a commodity, a form of money or financial capital must be able to be really saved, stored, and retrieved and be predictably useful when it is retrieved.

An effective store of value should have the following characteristics;

- It should be long lasting and durable; it must not be perishable or subject to decay. It should have a stable value.
- It should be difficult to counterfeit, and the genuine must be easily recognizable.

4.1.1.2 INTERPRETATION

The average result from this question was 1.39 out of a 7-point scale. This can be rounded off to 1 for purposes of evaluation based on the TRA. This figure represents a positive attitude.

A large proportion (44%) of the respondents said that M-pesa is slightly good when used as a means of payment. In term decision strength, 50% were quite certain with the responses they gave.

The median and the mode response also stood at 2, with a standard deviation of 1.07.

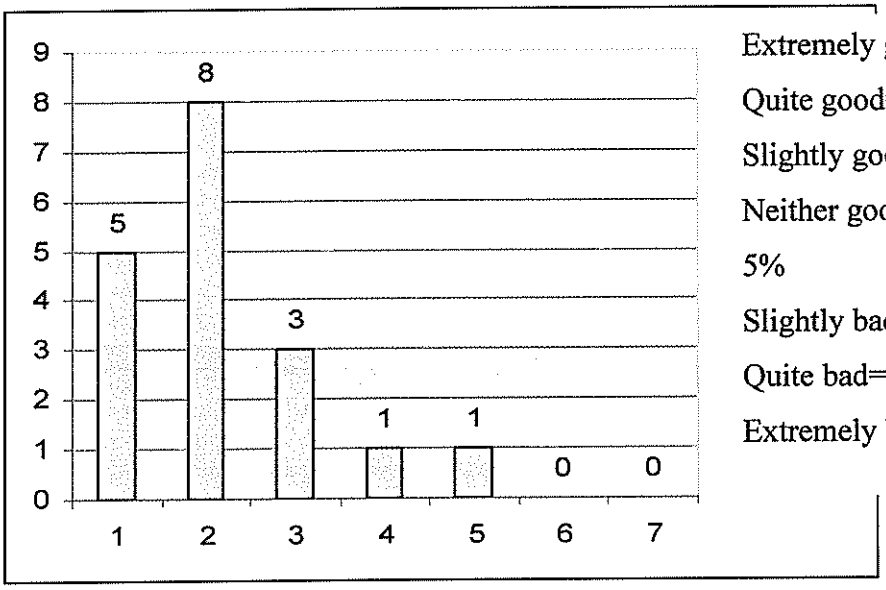
4.1.1.3 Calculations

Adoption probability= mean x disruptive index

= 1.39x0.611

= 0.849

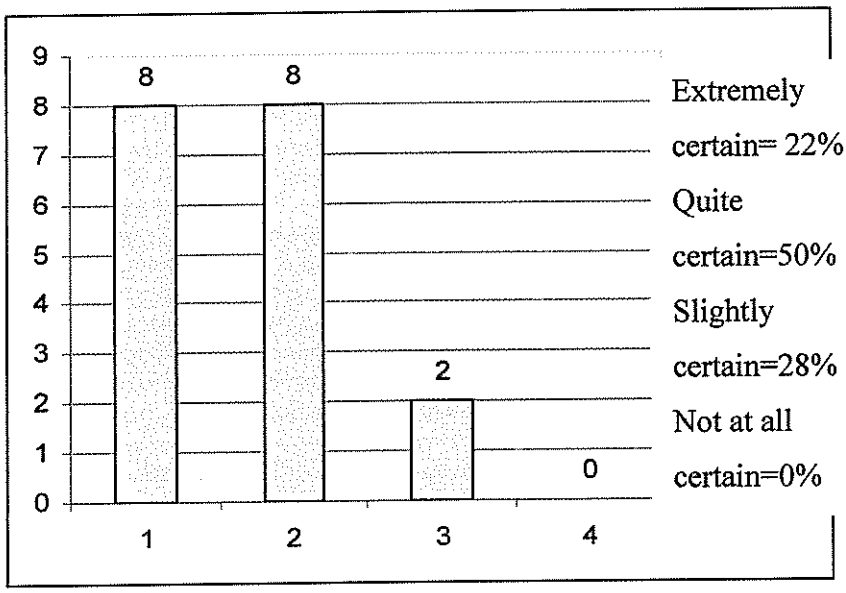
4.1.3 COMPARISON WITH OTHER MEANS OF MONEY TRANSFER



The study was conducted on 36 people of which out of the 36 five people responded that M-pesa was extremely good which represent 28% of the population of study, 8 people of the 36 said that M-pesa was quite good which represents 44% of the study population. 3 out of the 36 people said that M-pesa was slightly good representing 17% of the study population.

5% of the population were not decided if m-pesa was neither good nor bad. None of the population gave remarks whether it was slightly bad, quite bad or extremely bad.

DECISION STRENGHT OF '3A' ABOVE



The study was conducted on 36 people of which out of the 36 eight people responded that they were extremely certain which represent 22% of the population of study, 22 people of the 36 said that they were quite certain which represents 50% of the study population. 2 out of the 36 people said that they were slightly certain representing 28% of the study population.

0% of the population were not at all certain in using m-pesa

	Attitude	strength
Mean	1.8333333	2.333333
Median	2	2
Mode	2	2
S.Dev	1.098127	0.685994

Tally	3	2	1	0	-1	-2	-3
A	5	8	3	1	1	0	0
B	8	8	2	0			

4.1.3.1 FINDINGS

It is factual that M-pesa is not the first service to offer money transfer globally, there are other forms. Thus this question intended to find out how M-pesa compares to other means of money transfer.

4.1.3.2 INTERPRETATION

The average result from this question was 1.83 out of a 7-point scale. This can be rounded off to 2 for purposes of evaluation based on the TRA. This figure represents a positive attitude.

A large proportion (44%) of the respondents said that M-pesa is slightly good when used as a means of payment. In terms of decision strength, 61% were quite certain with the responses they gave.

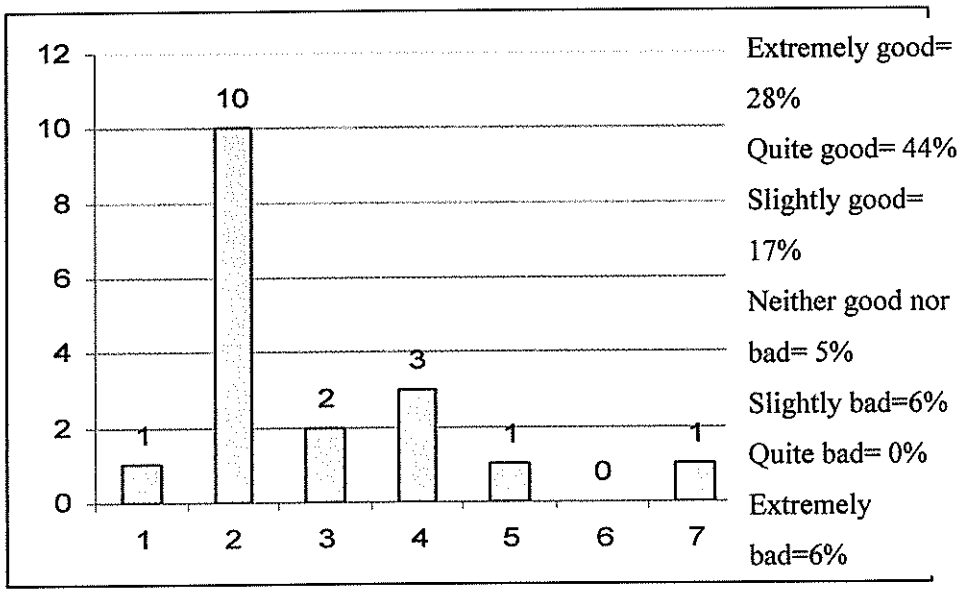
The median and the mode response also stood at 2, with a standard deviation of 1.09.

4.1.3.3 CALCULATIONS

Adoption probability= mean x disruptive index

= 1.833 x 0.611

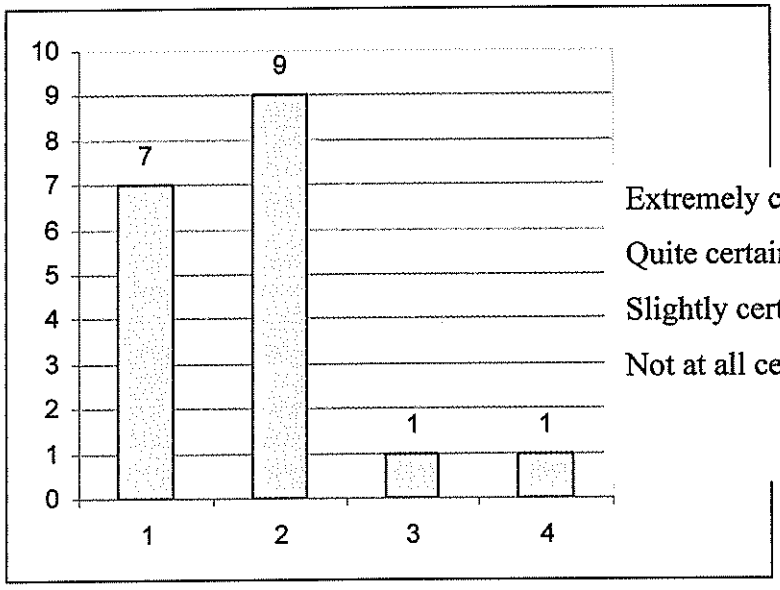
4.1.4 USAGE AS AN INDICATOR OF PURCHASING POWER



The study was conducted on 36 people of which out of the 36 one person responded that M-pesa was extremely good which represent 28% of the population of study, 10 people of the 36 said that M-pesa was quite good which represents 44% of the study population. 2 out of the 36 people said that M-pesa was slightly good representing 17% of the study population.

5% of the population were not decided if m-pesa was neither good nor bad. None of the population gave remarks whether it was slightly bad, quite bad one person said that it was extremely bad representing 6%.

DECISION STRENGHT OF '4A' ABOVE



The study was conducted on 36 people of which out of the 36 seven people responded that they were extremely certain which represent 39% of the population of study, 9 people of the 36 said that they were quite certain which represents 50% of the study population. 1 out of the 36 people said that they were slightly certain representing 5% of the study population.

6% of the population were not at all certain in using m-pesa representing one person.

	Attitude	strength
Mean	1.166667	2.222222

Median	2	2
Mode	2	2
S.Dev	1.4652850	0.808452

Tally	3	2	1	0	-1	-2	-3
A	1	10	2	3	1	0	1
B	7	9	1	1			

4.1.4.1 FINDINGS

An indicator of purchasing power is a perception and confidence that an individual has and is expressed as numerical unit of measurement of the market value of goods, services, and other transactions. Also known as a 'measure' or 'standard' of relative worth. An indicator of purchasing power is a necessary pre-requisite for the formulation of commercial agreements that involve debt.

An effective unit of account should be;

- Divisible into small units without destroying its value.
- A specific weight, measure, or size to be verifiably countable.

4.1.4.2 INTERPRETATION

The average result from this question was 1.16 out of a 7 point scale. This can be rounded off to 1 for purpose of evaluation based on the TRA. This figure represents a positive attitude.

A large proportion (56%) of the respondents said the M-pesa is slightly good when used as a means of payment. In term decision strength, 50% were quite certain with the responses they gave.

The median and the mode response also stood at 2, with a standard deviation at 1.47.

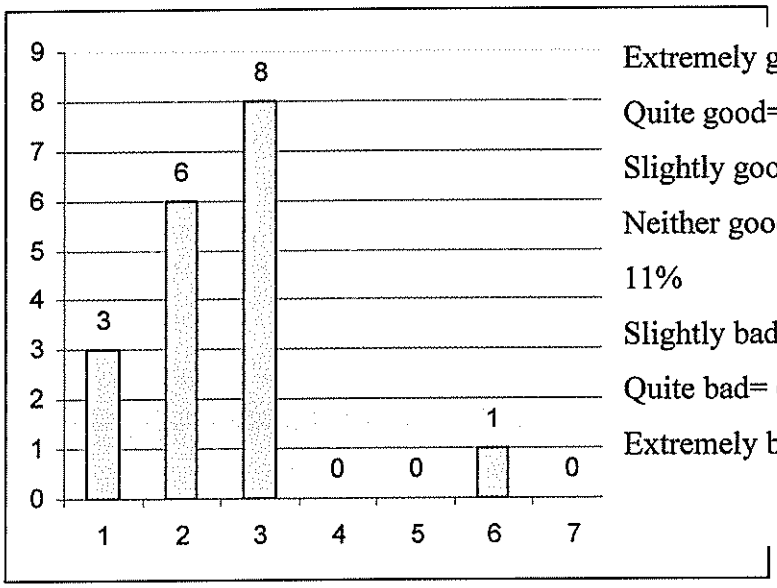
4.1.4.3 CALCULATIONS

Adoption probability= mean x disruptive index

$= 1.167 \times 0.611$

$= 0.713$

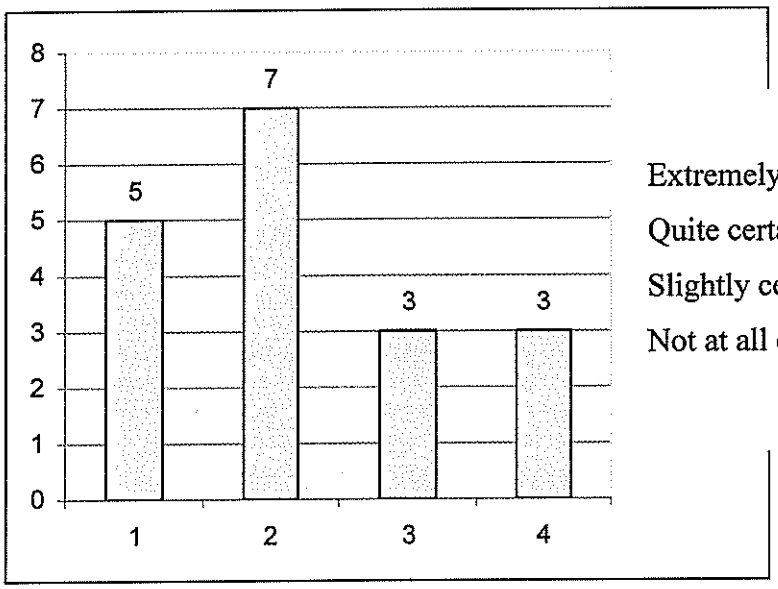
4.1.5 SUBJECTIVE NORMS BY REFERRENT PERSONS- PARENTS/GUARDIANS



The study was conducted on 36 people of which out of the 36 three people responded that M-pesa was extremely good which represent 17% of the population of study, 6 people of the 36 said that M-pesa was quite good which represents 33% of the study population. 8 out of the 36 people said that M-pesa was slightly good representing 44% of the study population.

11% of the population were not decided if m-pesa was neither good nor bad. None of the population gave remarks whether it was slightly bad, 6% said it was quite bad representing one person none said it was extremely bad.

DECISION STRENGHT OF '5A' ABOVE



Extremely certain= 28%

Quite certain=39%

Slightly certain=16%

Not at all certain=17%

The study was conducted on 36 people of which out of the 36 five people responded that they were extremely certain which represent 28% of the population of study, 7 people of the 36 said that they were quite certain which represents 39% of the study population. 3 out of the 36 people said that they were slightly certain representing 16% of the study population.

17% of the population were not at all certain in using m-pesa representing three person.

	Attitude	strength
Mean	1.5	1.777778
Median	1.5	2
Mode	1	2
S.Dev	1.150447	1.060275

Tally	3	2	1	0	-1	-2	-3
A	3	6	8	0	0	1	0
B	5	7	3	3			

4.1.5.1 FINDINGS

Referent persons of the respondents under the category of parents and guardians are perceived to think that money transfer by M-pesa is a slightly good idea represented by 44% of the respondents. This is coupled with a median of 1.5 coupled with a mode of 1. The standard deviation of the responses was1.15.

The decision strength was 39% of the respondents being quite sure of their responses.

NB; these perception of the referent persons are generated form the respondents as opposed to the persons being referred to.

4.1.6.2 CALCULATIONS

Adoption probability= mean x disruptive index

$= 1.5 \times 0.611$

$= 0.9165$

4.2 GENERAL INTERPRETATION

This is the findings from the summary of all the attitude and subjective norm mean scores multiplied by the disruptive index.

Adoption probability= mean x disruptive index

$$\text{Mean} = \frac{1.78 + 1.39 + 0.72 + 1.17 + 1.5}{5}$$

$$= \frac{6.56}{5}$$

$= 1.312$

Adoption probability= mean x disruptive index

$= 1.312 \times 0.611$

$= 0.801632$

NB: All the answers are part of the 7 point scale and are bound by +3 and -3

Therefore, we can conclude that the results derived after multiplication with the disruptive index represent the probability that as a results of individual attitudes and subjective norms, then there is a 0.801632 out of +3 chance that M-pesa can successfully be adopted by the populations as a preferred means of payment as opposed to use of traditional money as we know it.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.0 INTRODUCTION

The recommendations of the research are based on account of the instruments and procedures used for data collection and analysis. The recommendations are apportioned into five levels and these are; the Government and statistics collection agencies, users of technology, academicians and technology developers.

5.1 CONCLUSIONS

Literature on M-commerce adoption is very minimal in the market. Therefore, this research adds to the body of knowledge and provides a model for developing subsequent researches in the same field of study.

5.2 RECOMMENDATIONS

5.2.1 RECOMMENDATIONS FOR GOVERNMENT STATISTICS COLLECTION AGENCIES

The research will enable them to ensure that resources are put to use on the correct projects. It will also enable that resources are put to use on the correct projects. It will also enable them anticipate growth and plan for the future due after predicting the technology's probability for adoption.

It can also be used at Government level and enable them to perform comparative regional analysis. The disruptive index will also enable the Government bodies to know and measure the stabilities of both old and new technologies and be able to know which one is more robust and cannot be easily replaced by the use of technologies.

5.2.2 RECOMMENDATIONS FOR ACADEMICIANS

The capabilities of the derived model to quantify qualitative research will provide other researchers in the same field of study to conduct better researched. The ability to quantify will also enable academicians to study the trends of the technologies over a period of time.

They may also use it together with other models in order to get more results but from paradigms. This will enable the academics to have a clearer understanding of the other dynamics that may be influencing their findings.

5.2.3 RECOMMENDATIONS TO MANAGERS

The research provides a two faceted benefit for managers and practitioners. They may use it to have a better understanding of the technological needs of their employees. Secondly, they may use the findings to provide better workplace conditions after attitudinal needs of their employees. They may use the findings to ensure that their employees are motivated to do a desired behavior because the behavior is at par with their attitudinal expectations and the expectations of their workmates. The workmates may also form the group of referent persons if the model is to be used in an organizational setting.

5.2.4 RECOMMENDATIONS TO TECHNOLOGY DEVELOPERS

Technology developers may use this research and the findings to ensure that they develop products that fulfill the needs of the consumers. They can use the model to create differentiated products in their products lines to ensure that cater for much personalized needs of the consumers.

For instance, if the findings indicate that the friend's referent group scored the most positive attitudes and higher adoption indexes, then the developers may develop products under the theme that caters for friends and social networks.

5.2.5 RECOMMENDATIONS TO TECHNOLOGY ADOPTERS

Technology adopters may use the findings of this research to make wiser purchase decisions. They may be able to know if the technology they want to adopt is favored by other people so that they can communicate together and they may also know which technology is going to be relevant for a long time in the market before it is replaced by another more promising technology.

5.3 AREAS OF FURTHER RESEARCHERS

Further research may be carried out to endeavor to come up with a more precise numerical representation of the findings. This research borrows from the TRA the seven point scale. Other researchers may therefore recalculate this index and present it in a more generalized form which is easy to understand and interpret.

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APPENDIX A: QUESTIONAIRRE

PART 1 Adopters salient beliefs a bout M-pesa

1. How do you think M-pesa can deliver if used as a means of payment?

Extremely good	Quite good	Slightly good	Neither good or bad	Slightly bad	Quite bad	Extremely bad

1b How sure are you that using M-pesa can result in 1a above?

Not at all certain '0'	Slightly certain '+1'	Quite certain '+2'	Extremely certain '+3'

2. How would you rate it's ability to act as a store of value?

Extremely good	Quite good	Slightly good	Neither good or bad	Slightly bad	Quite bad	Extremely bad

2b. How certain are you that using M-pesa will result in 2a above?

Not at all certain '0'	Slightly certain '+1'	Quite certain '+2'	Extremely certain '+3'

3. What is your attitude towards using it as a means of taking and paying back debts?

Extremely good	Quite good	Slightly good	Neither good or bad	Slightly bad	Quite bad	Extremely bad

3b How sure are you about the answers in 3a above?

Not at all certain '0'	Slightly certain '+1'	Quite certain '+2'	Extremely certain '+3'

4. How would you compare M-pesa to other services used in sending money?

Extremely good	Quite good	Slightly good	Neither good or bad	Slightly bad	Quite bad	Extremely bad

4b. How certain are you that using M-pesa above would result in 4a above?

Not at all certain '0'	Slightly certain '+1'	Quite certain '+2'	Extremely certain '+3'

5. Would you think of yourself as having money if you have it in M-pesa format?

Extremely good	Quite good	Slightly good	Neither good or bad	Slightly bad	Quite bad	Extremely bad

5b. How sure are you about the answers in 5a above?

Not at all certain '0'	Slightly certain '+1'	Quite certain '+2'	Extremely certain '+3'

Part 2 **Referent persons approval of use of M-Pesa**

1a. **My Parents think**

I should **+3 +2 +1 0 -1 -2 -3** **I should not**

Use M-pesa to send them money

1b. **I am**

Not at all certain "0"	Slightly Certain "+1"	Quite certain "+2"	Extremely certain "+3"

That referent person 1a expects me to comply with the expected behaviour

2a. **My Friends think**

I should **+3 +2 +1 0 -1 -2 -3** **I should not**

Use M-pesa to send them money

2b. **I am**

Not at all certain "0"	Slightly Certain "+1"	Quite certain "+2"	Extremely certain "+3"

That referent person 2a expects me to comply with the expected behaviour

3a. **Relatives in the city think**

I should **+3 +2 +1 0 -1 -2 -3** **I should not**

Use M-pesa to send them money

3b. **I am**

Not at all certain "0"	Slightly Certain "+1"	Quite certain "+2"	Extremely certain "+3"

That referent person 3a expects me to comply with the expected behaviour

4a. **Relatives upcountry think**

I should **+3 +2 +1 0 -1 -2 -3** **I should not**

Use M-pesa to send them money

4b. **I am**

Not at all certain "0"	Slightly Certain "+1"	Quite certain "+2"	Extremely certain "+3"

That referent person 4a expects me to comply with the expected behaviour

5a. **Children or dependants think**

I should **+3 +2 +1 0 -1 -2 -3** **I should not**

Use M-pesa to send them money

5b. **I am**

Not at all certain	Slightly Certain	Quite certain	Extremely certain

"0"	"+1"	"+2"	"+3"

That referent person 4a expects me to comply with the expected behaviour

Part 3. Disruptive index

1. How do you think it would be if M-pesa replaces money and be used for paying goods and services?

Good +3 +2 +1 0 -1 -2 -3 Bad

1b. please give reasons to support regarding the answer 1a above.

Appendix: B: Work Plan

Activities	July	Aug	Sep	Oct	Nov	Nov	Dec
Topic Identification							
Writing Research Proposal							
Proposal Submission							
Data Collection							
Data Analysis and Interpretations							
Report compiling							
Submission of the Research Report							

Appendix C: BUDGET

Item/activity	Quantity	Unit cost	Total cost
Transport			15000.00
Stationery			10000.00
Binding			25000.00
Printing and typing			30000.00
Photocopy	50 pages	50.00	2500.00
Miscellaneous			15000.00
Grand total			**127500.00**

Appendix D CURRICULUM VITAE

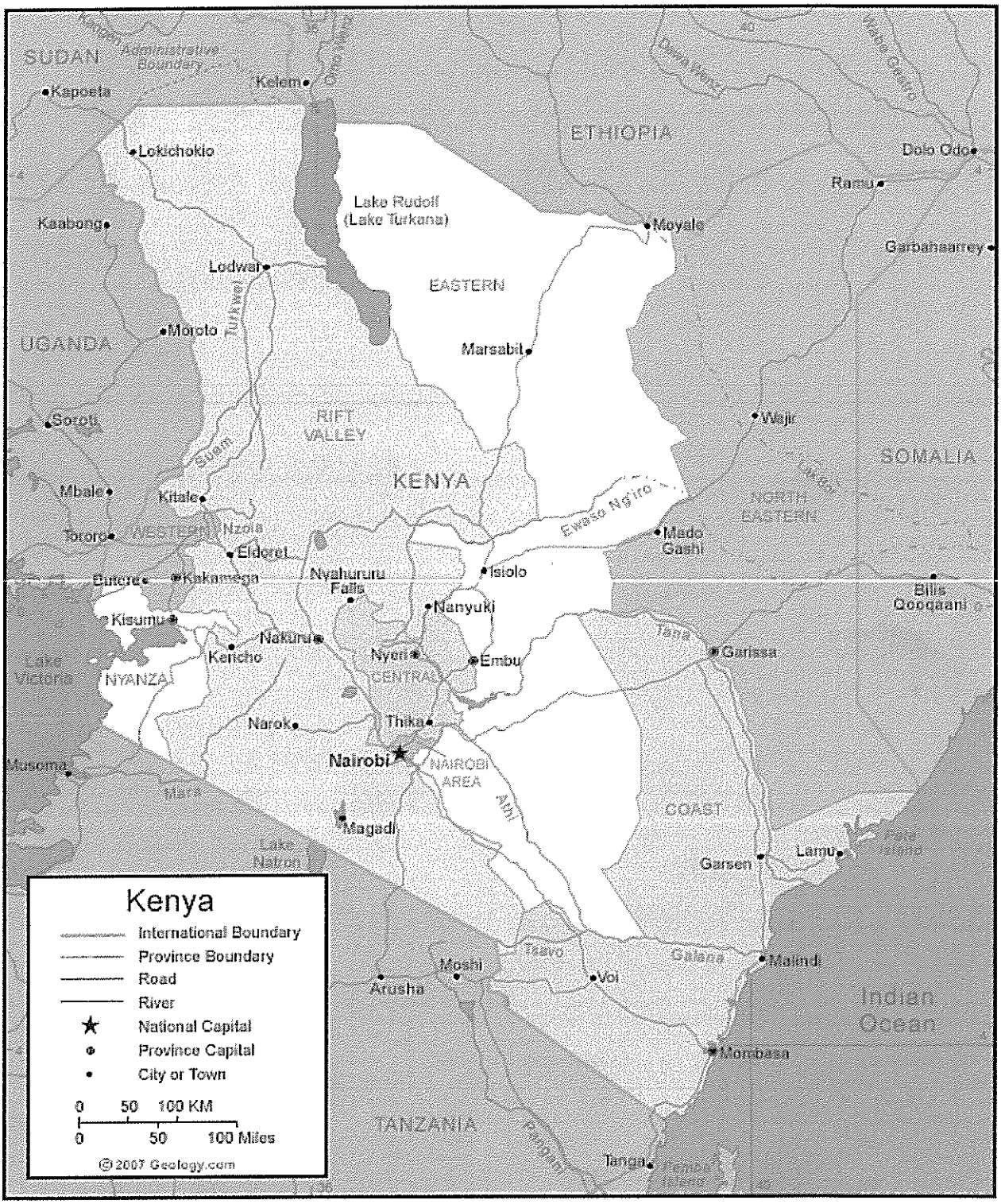
Personal Details

Name	NDISI DENNIS ISAIAH
Date of Birth	2ND JUNE 1984
Reg .No	BIB /7182/52/DF
Nationality	Kenyan
Mobile Phone number	+254723717570
Email Address	dndisi@yahoo.com
Language Ability	Swahili, English and Kikuyu
Marital status	Single

Educational Background

2008-2005	Bachelors of International Business Administration at Kampala International University.
2005	Certificate of Access Program Kampala International University.
2004-2002	Kenya Secondary Certificate of Education at St. Paul's High School-Kevote, Embu.
2002-1999	Secondary Education at Kirangari High School, lower Kabete..
1998-1991	Kenya Certificate of Primary Education (KCPE) -Kidfarmaco Primary School. Kikuyu.

Appendix E: MAP



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OFFICE OF THE DEAN
SCHOOL OF BUSINESS AND MANAGEMENT

Date: 4th December, 2008

THE HUMAN RESOURCE MANAGER,
M-PESA SERVICE FROM SAFARICOM
KENYA.

Dear Sir/Madam,

RE: NDISI DENNIS ISAIAH REG.NO.BIB/7182/52/DF

The above mentioned is a bonafide student of Kampala International University pursuing a Bachelor of International Business Administration programme in the School of Business and Management of the University.

He is currently conducting field research and the title of the Research project is "MOBILE COMMERCE AND ITS EFFECT ON THE WELFARE OF PEOPLE IN KENYA" A CAS STUDY OF M-PESA SERVICE . As part of his studies (research work) he has to collect relevant information through questionnaires, interviews and other relevant reading materials.

Your Institution has been identified as a valuable source of information pertaining to his research project. The purpose of this letter is to request you to avail him with the pertinent information he may need.

All and any information shared with him will be used for academic purposes only and we promise to share our findings with your institution.

Any assistance rendered to him in this regard will be highly appreciated.

Yours Sincerely,

MR. MUSANA MICHAEL
AG: DEAN SCHOOL OF BUSINESS & MGT