THE EFFECT OF MOBILE TRANSACTIONS ON THE FINANCIAL PERFORMANCE OF MUTUAL FUNDS IN KENYA

BY

JOHN RAYMOND AKOKO

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF BUSINESS ADMINISTRATION, SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI

OCTOBER 2014

DECLARATION

I hereby declare that this research project is my own work. It has not been presented by any other person from the university or any other institution

SIGNATURE: …………………………   DATE…………………….

JOHN RAYMOND AKOKO

Reg. No. D61/72765/2012

This research project has been submitted for examination with my approval as the university supervisor.

SIGNATURE: …………………………   DATE…………………………..

MR. IRAYA MWANGI

Department of Finance and Accounting

School of Business,

University of Nairobi

ACKNOWLEDGEMENTS

First, I am indebted to the all-powerful GOD for all the blessings he showered on me and for being with me throughout the study. I forthwith acknowledge the support of my loving family both my siblings and parents, Mr. and Mrs. Akoko, who stood by me throughout my studies and particularly for their unending support; both materially and emotionally.

I am deeply obliged to my supervisor Mr. Iraya Mwangi for his exemplary guidance and support without his help this project would not have been successful. I also thank my colleagues, all the lecturers, management and staff at the University of Nairobi.

DEDICATION

I dedicate this research work to my family and all those who supported me in the completion of this research project writing.

ABSTRACT

Mobile telephony is among the momentous technological inventions in the world and has tremendously changed the way business is transacted in Kenya. Mutual funds, just as other financial institutions, have unearthed lucrative mobile transactions that seek to lure both local and foreign investors. However, little has been empirically proven on how the mobile transactions have affected the funds' performance. Thus, the objective of the study was to determine the effects of mobile transactions on financial performance of mutual funds in Kenya. The study adopted a descriptive research design which assumed a correlation study approach. The target population was the 62 funds operators regulated by the Capital Market Authority as at December 2013. However, the study selected five mutual funds managers using convenient sampling who managed a total of fifteen mutual funds. Secondary data was collected on average amount of mutual fund, number of mobile transaction, amount of funds invested and Treasury bill rate from the funds' annual reports and CBK offices for the periods 2009 to 2013. Descriptive analysis was adopted whereby statistics such as mean, standard deviations, minimum and maximum values, kurtosis and skewness assessed. Inferential analysis using multiple linear regression models was used to determine the relationship between mobile transactions and mutual funds' performance. The results show the mutual funds experience returns as high as 2.21 with a standard deviation of 1.26. The average number of mobile transactions was 371.2 with a maximum of maximum of 3,402. The study concluded that mobile transactions play a significant role in determining the financial performance of mutual funds. Besides, large funds tended to perform better owing to economies of scale. The study recommended that CMA to lobby for increased mutual fund amounts through mobile transactions and fund managers to ensure good returns by investing in diversified portfolios as different types of funds performed differently.

TABLE OF CONTENTS

LIST OF TABLES

ABBREVIATIONS

CCK- Communications Commission of Kenya

GDP – Gross Domestic Product

NGO – Nongovernmental Organization

CMA – Capital Markets Authority

IT – Information Technology

TAM – Technology Acceptance Model

TRA – Theory of Reasoned Action

TPB – Theory of Planned Behavior

WTO – World Trade Organization

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The transformation of the mobile phone from yuppie plaything to a tool that drives economic growth in the developing world is arguably the biggest technology story of the first decade of the 21st century (Anurag, Tyagi & Raddi, 2009). While there are approximately six billion mobile devices used across the world, only a quarter are found in the developed world, which means that the mobile is predominantly a developing world story. Mobile phone subscribers in Kenya are now over 30 million. The number marks a growth as witnessed in the period between July and September 2012. In the quarterly statistics report for the first quarter of the 2012/13 Financial Year (July – September 2012), released by Communications Commission of Kenya (CCK) today, the market had 30.4 million mobile subscribers as at 30th September 2012 up from 29.7 million in the three months preceding July 2012 (CCK, 2009).

The growth of mobile technology has had a profound, positive impact on financial services and transactions. This is especially true in emerging markets such as Kenya, where the amount of adults using mobile money services (11.5 million) is more than double the amount of those who use traditional banking services (5.4 million). The success of M-Pesa in Kenya has been well documented over the past years, with over 25% of the country's GDP currently flowing through it (Government of Kenya, 2008). The convenience of the service is set to increase with a new deal between Safaricom and Skrill, an online platform based in the United States. Kenyans living in other countries will soon

1

be able to send money and invest directly through M-Pesa accounts regardless of the user's location around the world.

Despite the number of mobile investments platforms popping up, access to the financial system is currently out of reach for more than 2.5 billion people worldwide. Mobile investments platforms provide those living in poverty with opportunities to further their education, alleviate their leaving standards through availing a new lease to life (Arunga, 2007). Finding a way to spread and sensitize citizens on the advantages allied to mobile transactions will require the concerted efforts of banks, NGOs, governments and corporations.

1.1.1 Mobile Transactions

Over the years, the mobile phone has revolutionized into a useful gadget that affects the economy. For instance, through mobile phones, investors have a feasible avenue to remit as well as receive funds from operators. With the advent of mobile transactions, both investors and mutual fund operators have evidenced a notable change. For instance, investors finalize transactions with minimal efforts while operators sensitize the populace towards a saving culture. Over the years, mobile operators have merged with financial players in the industry seeking to rejuvenate performance (Anurag, Tyagi and Raddi, 2009).

Kenya has indeed come of age, having revolutionized global mobile banking systems by inventing the first mobile banking technology. The uptake of mobile banking in Kenya is growing at a remarkable pace and it is increasingly becoming the platform of choice for delivering innovative financial services and commerce capabilities (Arunga, 2007). It is

worth noting that this trend of continued reliance on mobile devices to execute monetary transactions is gaining momentum and reflects the right direction and preparation for the future of banking in Kenya and Africa at large.

According to Arunga (2007) in a recent Finaccess Survey report 2013, the country's financial inclusion levels are now at 80 percent, with mobile banking uptake contributing to 57 per cent of the total number of Kenyans with access to some form of formal financial platform. The proportion of the adult population using formal financial services rose to 66. 7 per cent in 2013 from 41.3 per cent in 2009. Recent CCK quarter four reports indicate that the level of mobile telephony penetration has increased by 2 percent to 30.5 million with an increase in mobile money transfer subscriptions from 23.2 million in the last quarter to 24.8, which translates to a 6.8 percent growth (Arunga, 2007).

1.1.2 Financial Performance

Financial performance seeks to measure how various economic sectors respond to new developments (Epstein & Manzoni, 2002). Through financial performance different economic players, avail intricate information to investors and shareholders as a public duty. In seeking to reinforce transparency and accountability, the Kenyan Constitution requires financial institutions handling public money to disclose their annual performance. Financial performance is an assessment platform where parties evaluate an institution's record across the industry. With the passage of time, financial performance has become a significant economic element in the Kenyan economy as market players continue to garner vigilance and collective responsibility.

There are different financial performance measurement tools that include, the Expense Ratio, Portfolio Turnover, Standard Deviation, Beta, R-squared and the Sharpe Ratio. The Sharpe ratio represents tradeoff between risk and returns. Mathematically the Sharpe ratio is the returns generated over the risk free rate, per unit of risk. Risk in this case is taken to be the fund's standard deviation. As standard deviation represents the total risk experienced by a fund, the Sharpe ratio reflects the returns generated by undertaking all possible risks.

1.1.3 Effect of Mobile Transactions on Financial Performance

The combination of widespread cellular communication and the ability to transfer money instantly, securely, and inexpensively are together leading to enormous changes in the organization of economic activity, family relations, and risk management and mitigation, among other things. Agarwal and Karahanna, 2000 denotes that a decade ago, family members in different parts of Kenya had a very limited scope of communicating with relatives in distant parts of the country, and they faced even greater difficulties in sending or receiving remittances (Elder & Rashid, 2009). Now, in many cases, appeals for assistance and the availability of resources can be communicated, and money can be transferred almost instantaneously. Among the changes observers have noted are changes in the nature, pattern and impact of remittances.

The upsurge in mobile transactions garners both a theoretical and empirical relationship. Given the numerous subscribers in the Kenyan economy, mutual fund operators have certainly discovered a lucrative market niche worth exploiting (Agarwal & Karahanna, 2000). Ever since their inception, propagators have never indicated the desire to turn back

affirming that the products garner positive financial performance of the mutual funds (Eagle, 2005). Given the simplistic nature of the mobile transactions and their ability to net numerous users across the economic divide, mutual fund operators gradually garner appealing results. This affirms that there is a direct relationship between mobile transactions and mutual funds financial performance. Through mobile phone platforms, operators indicate that, clients are more committed to saving and loan repayment as Mshwari record the lowest default rate in the Kenyan Banking sector (Anurag, Tyagi & Raddi, 2009).

1.1.4 Mutual Funds in Kenya

Arnold (1970) defines a mutual Fund as a fund established in the form of a trust by a sponsor to raise money by the trustees through the sale of units to the public under one or more schemes for investing securities in accordance with these regulations. In common terms, a mutual fund is a portfolio of stocks, bonds, or other securities that is collectively owned by hundreds or thousands of investors and managed by a professional investment company (Arnold, 1970). Fund industry penetration and growth in Kenya dates back to the 1980s and 1990s, as a result of three factors: a bull market for both stocks and bonds, new product introductions (including tax-exempt bond, sector, international and target date funds and wider distribution of fund shares. Among the new distribution channels were retirement plans.

In the Kenya, mutual funds must be registered with the Capital Markets Authority, overseen by a board of directors (or board of trustees if organized as a trust rather than a corporation or partnership) and managed by a registered investment adviser. Mutual funds,

like other registered investment companies, are also subject to an extensive and detailed regulatory regime set forth in the Investment Company Act. Mutual funds are not taxed on their income and profits if they comply with certain requirements under the country's framework. A mutual fund makes money in two ways; either by earning dividends or interest on the investments it owns or by selling securities that has appreciated in value(Kane &Santini, 1992).

Kenyans prefer mutual fund and not individual securities because of the following reasons. First, a great deal of time and expertise is required to analyze a company—its prospects for earnings growth, its performance over the short and long term in comparison to its competitors, its debt level and creditworthiness, its new products in the pipeline, and technological changes looming that might harm or improve business. Second, purchasing individual securities involves higher transaction costs. Even when you use a discount broker, the commissions you pay to buy and sell are not cheap. Third, owning individual stocks means you are less likely to have proper diversification. To diversify a stock portfolio, you need to own at least 10 to 20 different companies in different industries, which could cost very much. For the same price you might pay for 100 shares of one security, you can buy units in a fund that owns 100 securities. Diversification lowers your investment risk—if one or two stocks plunge, others may gain in value, offsetting the loss (Kane &Santini, 1992).

1.2 Research Problem

Without a doubt, mobile telephony is among the momentous technological inventions unveiled in the 21st century. Its functionalities traverse numerous economic sectors bearing a resound impact in Kenya financial sector. The M-Pesa launch back in 2007 took the world by storm as Kenya made a significant move to alleviate the financial sector through a mobile platform. Ever since this invention, the country has forged towards revolutionizing the industrial sector through mobile platforms. In the recent years, mutual funds among other financial institutions have unearthed lucrative mobile transactions that seek to lure both local and foreign investors (Arunga&Kahora, 2007).

The use of mobile payment technology requires basic knowledge to operate. As a result, majority of the micro business operators in Kenya have embraced its use in their daily business operations and are registered users of M-Pesa. Consequently, they carry out various transactions using their mobile phones within and around their business surroundings such as paying suppliers for goods and services, paying bills, sending money to friends and relatives, withdrawing cash and topping up airtime accounts (Vaughn, 2009). They are able to know their account balances and easily manage their accounts. This development has created a feasible avenue for mutual fund operators to exploit. This is because through mobile transactions investors rely on M-pesa to remit their finances, providing a secure means of payment. With the advent of smartphones, users have the ability to login to their accounts and confirm their balances, withdraw funds or raise any other query warranting prompt responses. However, there are no existing studies that have been done to find out the impact of using these mobile platforms on the success and growth of mutual funds in Kenya. This study seeks to investigate the effects that emanate

from the behavioral intention to use the mobile platforms and whether the actual usage results in the financial success and growth of the mutual funds. The study intends to offer an insight into the financial implication of mobile investment technology by assessing the performance of mutual funds and gives proposition for future research in this area.

Over the years, researchers have devoted significant attention into the impact of technology on financial performance. For instance, Jack and Suri (2009) did a study on the inconspicuous nature of M-Pesa transfers and its impact on personal savings. Roller and Waverman (2001) assessed the impact of telecommunications infrastructure on economic development in 21 OECD countries. Morawczynski and Pickens (2009) did a study on why users often keep a balance on their M-Pesa accounts. Mbiti and Weil (2011) did a study on the impact of Mpesa in the Kenyan economy. Arunga and Kahora (2007) assessed how sole proprietors and small businesses in Kenya benefited from the mobile phone revolution, as they are able to make savings and gains. Researchers have continually eluded the impact mobile transactions have had on mutual funds given its recent indoctrination into the global economy. Since other scholars are yet to immerse them into this contentious issue, this research has unveiled the intricate effects, mobile transactions have on mutual funds' performance in Kenya.

This research paper has resolved a number of inquisitions that include the following. What is the effect of mobile transactions on mutual funds' performance? What is the nature and extent of relationship between mobile transactions and the financial performance of mutual funds? What is the role technology plays in bolstering financial performance in Kenya? Finally, the study will seek to unveil the benefits or drawbacks that befall both local and foreign investors given the numerous mobile transactions by modern investors.

8

1.3 Research Objectives

To determine the effects of mobile transactions on financial performance of mutual funds in Kenya

1.4 Value of the Study

Mobile telephony is among the most valued inventions in the 21st century. Without a doubt, the device has had a remarkable impact on various industries in the global economy. Despite the prevalent hurdles, the mobile phone has managed to revolutionize communication while integrating innumerable functionalities that affect the financial sector in distinct and diverse ways. This research paper has documented the effects of mobile transactions on mutual funds financial performance seeking to unearth all intricate economic elements.

This research paper intends to benefit numerous players in the Kenyan financial industry. First, the documented research will aid financial analysts deduce a worthy trend into the impact mobile transactions have on the financial industry. Market regulators like CMA will garner worthy information from the research paper related to the current and future trend of the financial industry. This study will also act as a revelation to both local and foreign investors into the impact mobile transactions have on mutual funds financial performance. The study has laid a foundation for improved research into this ever-dynamic industry.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The second chapter discusses the theoretical framework, determinants of mutual fund performance and the empirical review.

2.2 Theoretical Framework

Mobile payment procedures are essentially information technology (IT) procedures and channels through which users make various payment transactions. Studies show that the acceptance to use the mobile payments varies with the context in which users are able to use a mobile payment procedure. Moreover, the mobile payment procedures are functional services adopted for utilitarian reasons (Khodawandi, Pousttchi and Wiedmann, 2003). This study focuses on the effect of mobile transactions on mutual fund operators and applies the three technological theories that include Technological Acceptance Model, Theory of Planned Behavior and The Theory of Reasoned Action and Its Derivatives in User Acceptance

2.2.1 Technology Acceptance Model

Theory of Technology Acceptance Model (TAM) is a theoretical model that explains how users come to accept and use a technology (Davis, 1989). The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it. These factors are perceived usefulness defined as the degree to which a person believes that using a particular system would enhance his or her

job performance, and perceived ease of use defined as the degree to which a person believes that using a particular system would be free from effort (Davis, 1989). These two factors are considered to be the primary determinants for adopting and using a new technology and are influenced by other variables such as security concerns, cost, convenience, and satisfaction (Lu, Yu, Liu and Yao, 2003). Perceived ease of use directly affects perceived usefulness and both determine the user's attitude towards use, (behavioral intention to use -BIU) and eventually to the actual use of the system (Viehland and Leong, 2007).

TAM has been widely used to predict user acceptance and use based on perceived usefulness and ease of use (Ndubisi and Richardson, 2002). Consequently, TAM was chosen as the appropriate model and was extended to include other factors such as perceived ease of accessibility of the mobile payment services, perceived low cost of the mobile payment services, perceived convenience, perceived security, perceived support from the mobile services provider and from the government, perceived satisfaction and actual usage of the mobile payments.

2.2.2 The Theory of Reasoned Action

FishbeinAjzen's Theory of Reasoned Action (TRA) in the social psychology literature defines relationships between beliefs, attitudes, norms, intentions, and behavior. According to this theory, an individual's behavior for instance the use or rejection of technology is determined by one's intention to perform the behavior. This intention is influenced jointly by the individual's attitude and subjective norm, defined as "the person's perception that most people who are important to him think he should or should not

11

perform the behavior in question (Christensen, Anthony & Roth, 2004). According to

TRA, attitude toward a behavior is determined by beliefs about the consequences of the

behavior and the affective evaluation of those consequences. However, attitude alone does

not solely determine behavioral intentions. Intentions are determined also by subjective

norms, which, in turn, are determined by an individual's normative beliefs and motivation

to comply with perceived norms. The result is a generalized model for understanding the

determinants of human behavior in situations where people may exert their choices. The

model has been used to make accurate predictions of human choice in situations as diverse

as voting in elections and consumption of alcoholic beverage. In their meta-analysis

examining the application of TRA, it is apparent that the theory performed extremely well

in the prediction of choice among alternatives (Jackson, Chow & Leitch, 1997).

2.2.3 Theory of Planned Behavior

While the Theory of Reasoned Action (TRA) has been the most widely used theory for

examining user acceptance, other theoretical perspectives have also been used. The

Theory of Planned Behavior (TPB) is a descendant of TRA and adds a third antecedent of

intention, perceived behavioral control, to the TRA model. Perceived behavioral control is

determined by the availability of skills, resources, and opportunities, as well as the

perceived importance of those skills, resources, and opportunities to achieve outcomes.

Perceived behavioral control has been viewed to be close to the self-efficacy belief

concept. TPB holds that attitudes, subjective norms, and perceived behavioral control are

direct determinants of intentions, which in turn influence behavior (Taylor &Todd, 1995).

TAM is a (slightly) better predictor of usage, but the decomposed TPB model provides a more complete understanding of the determinants of intention. The authors note that, in choosing between TAM and the decomposed TPB, the trade-off of moderate increases in explanatory power for intentions versus added complexity is a difficult one. The decomposed TPB adds seven more variables to increase the predictive power of behavior over TAM (Davis, 1989). However, the decomposed TPB also helps researchers better understand the roles of subjective norms and perceived behavioral control, which are absent from TAM. If the goal is to predict IT usage, TAM may be better; however, if the goal is to understand specific determinants of intention, the decomposed TPB may offer additional explanatory power. Thus, the Theory of Reasoned Action and its derivatives provide a useful and robust composite perspective on the issue of technology acceptance.

2.3 Determinants of Mutual Funds Financial Performance

Numerous economic factors determine the growth of a national economy. Analyzing the economic factors gives an idea of the current economy position and a projection of the future of the economy based on which we decide the future of a particular industry. The various economic factors responsible for mutual fund industry in Kenya include Population, Movement in Global Markets, and the potential service capital around the world and inflation effects on returns (Venanzi, 2012).

With the increase in global trade and finance, there is a need for level playing field as the WTO has laid down common rules to facilitate smooth trade among member countries irrespective of their size. Fall out of globalization is the increase in volatility and vulnerability of markets. This environment crisis also spreads quickly and there is a

greater danger of contagion than even before. In order to detect timely fault lines in the global financial markets and put in place appropriate corrections, the adoption of international standards and global benchmark becomes important (Terraza, 2013). It is in this context, effective management of risks assumes critical importance to all the constituents of the financial sector and Kenyan mutual funds industry is not an exception. Mutual funds have been a significant source of investment in both government and corporate securities. Unlike decades where the state controlled a monopoly of the UTI being the key player, at present, there are numerous mutual funds exist, including private and foreign companies (Rouwenhorst, 2004).

Actively managed funds, in contrast to passively managed funds, attempt to beat a benchmark. Positive excess returns, defined as the portion of a fund's return that is higher than the manager's benchmark, can theoretically be attained on a consistent basis if the manager is skilled at selecting securities, rotating sectors or timing markets. Any positive excess returns are, more often than not, just enough to cover the cost of the management fees. The risk-free rate is the minimum return an investor expects for any investment because he or she will not accept additional risk unless the potential rate of return is greater than the risk-free rate (Terraza, 2013). In practice, however, the risk-free rate does not exist because even the safest investments carry a very small amount of risk. Thus, the interest rate on Treasury bill is often used as the risk-free rate (Kane and Santini, 1992).

Treasury Bills (T-bills) are the most marketable money market security. Their popularity is mainly due to their simplicity. Essentially, T-bills are a way for governments to raise money from the public. The biggest reasons that T-Bills are so popular is that they are one of the few money market instruments that are affordable to the individual investors

(Terraza, 2013). Under ordinary circumstances, bonds with longer terms have higher effective rates, which is attributable to interest rate sensitivity. This results in an upward-sloping yield curve as shown below. Yield curves are developed from the yields on bonds of similar credit quality. The yield curve shift up or down with changes in quality and bonds with low ratings plot higher than bonds with high ratings, reflecting the default risk premium (Siau, Sheng, Nah and Davis, 2004).

2.4 Empirical Review

Several empirical studies have been conducted in the area of mobile technology and how it influences the financial performance of the economic growth of a nation. This paper will limit the review on how acceptance of new technology influences the economic growth of difference nations. Morawczynski and Pickens (2009) found that users often keep a balance on their M-Pesa accounts, thereby using the system as a rudimentary bank account. The duo inferred that the service offers users with a more flexible financial system curtailing numerous hindrances allied to the conventional banking systems. M-Pesa users also sends maller but more frequent remittances compared with users of other transfer services or methods, suggesting that the system might allow informal insurance networks to function more effectively. According to the authors, M-pesa offers insurance users with a convenient platform to remit their pending obligations as they fall due.

Roller and Waverman (2001) assessed the impact of telecommunications infrastructure on economic development in 21 OECD countries and found that a 10 percent increase in the telecommunications penetration rate increased economic growth by 1.5 percent. Waverman, Meschi and Fuss (2005) conducted a similar analysis in developing countries

and found that a 10 percent increase in mobile penetration levels was associated with a 0.6 percent increase in growth rates.

Muto and Yamano (2009) similarly estimate the impact of mobile phones on agricultural markets in Uganda, focusing on farmers' market participation rather than market efficiency. Using a panel dataset on farm households between 2003 and 2005, they found that mobile phone coverage is associated with a 10 percent increase in farmers' probability of market participation for bananas, although not maize, thereby suggesting that mobile phones are more useful for perishable crops. This effect was greater for farmers located in communities farther away from district centers since it improved access to price information reduced marketing costs and increased farm-gate prices, increasing productive efficiency.

Cui, Jong and Ponds (2011) sought to assess whether or not intergenerational risk sharing desirable and feasible in funded pension schemes. Using a multi-period OLS model, they investigated risk sharing between generations for a variety of realistic collective funded pension schemes, where pension benefits and contributions may depend on the funding ratio and the asset returns. They found that well-structured intergenerational risk sharing via collective schemes can be welfare-enhancing *vis-à-vis* the optimal individual benchmark. Moreover, from an *ex ante* perspective the expected welfare gain of the current entry cohort is not at the cost of the older and future cohorts.

According to Arunga and Kahora (2007), sole proprietors and small businesses in Kenya benefited hugely from the mobile phone revolution, as they are able to make savings and gain access to more customers and new services. Various transactions are carried out

using mobile payments such as paying suppliers for goods and services, paying bills, sending money to friends and relatives, withdrawing cash and topping up airtime accounts. Through the study conducted, it is apparent that mobile phone platforms will revolutionize the business environment both in Kenya and around the world.

Aker (2008) found that the introduction of mobile phones is associated with increased trader and consumer welfare. The introduction of mobile phones led to a reduction in the intra-annual coefficient of variation, thereby subjecting consumers to less intra-annual price risk. Mobile phones also increased traders' welfare, primarily by increasing their sales prices, as they were able to take advantage of spatial arbitrage opportunities. The net effect of these changes was an increase in average daily profits, equivalent to a 29 percent increase per year.

Jack and Suri (2009) study suggested that the inconspicuous nature of M-Pesa transfers could allow individuals to increase their personal savings, because friends and relatives would be less likely to know about the timing or amount of transfers. Their study affirmed that M-pesa is a secretive platform where subscribers can only disclose insignificant personal details. Given that the system is personalized, individuals are more likely to save higher amounts. According to Jack and Suri, M-pesa tends to transform users from impulse spenders to savers who channel their finances to worthy causes.

Muto and Yamano (2009) estimated the effect of both household-level mobile phone adoption and village-level mobile phone coverage on household participation. To correct for the endogeneity of the adoption variable, the authors use village-level mobile phone coverage and household time-invariant characteristics as instruments. One of the

household-level instruments used is farm assets, which could be strongly correlated with mobile phone adoption and market participation, the dependent variable. Thus, the validity of the instrument is of some concern for household-level results.

2.5 Summary of Literature Review

The question of user acceptance is of concern to all researchers and procurers who wish to predict which candidate technologies will prove most suitable for an organization or how a given design is likely to be received by users. As such, the issue draws on multiple theoretical perspectives and on research topics as diverse as change management in organizations, human attitude formation, systems analysis, user interface design, and technology diffusion. In seeking to influence the design of technologies to maximize their acceptance, organizational analysis approaches, such as socio-technical systems theory, enable the planning of work activities around technology in a manner that minimizes resistance and ideally maximizes the potential for user satisfaction and development. Finally, usability engineering affords the means of factoring acceptance into the design of the interfaces between users and the technology. By articulating the concept in an (at least partially) operationalized form, usability engineering work offers pragmatic techniques for maximizing the chances of the acceptability at the interface between the system and the individual user. Clearly, each approach offers something to our understanding of the issue of user acceptance. At this time, there appears to be little hope for an overarching theory that will encompass both the explanation and the prediction of user acceptance, as well as providing the tools for ensuring that any design process leads to an acceptable product. However, the terrain is mapped, and further research can yield the type of answers that are still sought.

Without a doubt, the Kenyan economy has come of age unveiling numerous mobile transactions. Over the past five years, researchers document a momentous impact allied to mobile telephony. With time, mutual fund operators have managed to transform their operations from manual to digitalized operations. Through these transitions, a number of mutual fund operators have managed to indoctrinate mobile transactions into their operations. In comparison to the documented impact of mobile telephony in the Kenyan economy, it is worth deducing that mutual funds will cut across the economic grid luring both high and low income earners. For instance, small businesses in Kenya affirm a resounding positive effect allied to inculcation of mobile transactions like M-pesa into their operations.

Through the empirical review, it is apparent that mobile transactions are new initiatives not only in Kenya but also around the world. Past studies have generalized their scope focusing on the impact of technology on the financial industry. This implies that scholars both in Kenya and around the globe are yet to avail a conclusive documentation of mobile transactions and their impact on mutual fund's financial performance. This research seeks to seal the impending loophole by indulging in this complex study intending to unravel conclusive details that could benefit mutual fund operators, the government, potential investors, as well as future academician by providing a base for further studies.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter has defined the research design and methodology for the study. It contains a description of the study design, target population, sampling design, data collection technique and data analysis technique.

3.2 Research Design

Research design refers to how data collection and analysis are structured in order to meet the research objective through empirical evidence economically (Chandran, 2004; Cooper and Schindler, 2006).

This study utilized a descriptive research and adapted a correlation design. Correlation research is a research design that attempts to show causal relationship between a set of independent and the dependent variables (Sekaran 2006; Cooper and Schindler, 2006). The correlation research design was preferred by this study since it will show causal relationship between mobile investment platform and the performance of mutual funds.

3.3 Target Population

The study targeted a general cross-section of the 62 funds operators, which are regulated by the Capital Market Authority in Kenya as at December 2013 (see Appendix I).

3.4 Sampling Design

According to Orodho and Kombo (2002), sampling is a process of selecting a number of individuals or objects from a population such that the selected group contains elements representative of the characteristics found in the entire group. According to Mugenda & Mugenda (2003), this means the process of selecting a few cases from a large population for the purpose of studying them and generalizing on the large population. The few cases shall be the sample while the total population is the universe.

Given the expansive sample base, the researcher used convenient sampling to select five mutual funds managers. The selected mutual funds managers operate on the Nairobi Stock Exchange. Choice of the mutual fund managers listed at the NSE is based on the fact that they publish their annual financial reports with CMA and publics which eased access to information.

3.5 Data Collection Techniques

The preferred data collection instrument was secondary data. Data on average amount of mutual fund, number of mobile transaction and amount of funds invested was collected from annual financial reports published by the different mutual fund operators. Treasury bill rate was collected from the central banks of Kenya offices. The data was collected over a five years period; from 2009 to 2013. Given the nature of the study, it went in hand with a descriptive research design seeking to seal any loopholes in the data collection process. The research used a data collection form to collect specific information.

3.6 Data Analysis Methods

The data was analyzed using descriptive statistics such as mean, standard deviations, minimum and maximum values, kurtosis and skewness. Regression and correlation analysis was applied to show the relationship between variables. Various tables, charts and bar graphs and diagrams were used to present the data for easy interpretation. The study used the Sharpe Ratio to deduce the underlying trend of the data. The information was then tabulated for easier analysis and recommendation. The dependent variables were regressed against each independent variable and the result was expressed in form of regression equation. This is similar to Cui, Jong and Ponds (2011) who used ordinary least square (OLS) regression model to estimate the effect of risk sharing on the performance of contributory funds.

$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + U_{it}$

Where,

Y_{it} represent Sharpe Ratio analysis for mutual fund at time t.

X_{1it} represent value of mobile transaction at time t.

X_{2it} represent the Treasury bill rate for the period as control variable

X_{3it} represent the amount of funds invested as control variable. This was standardized using logarithm to the base of 10.

i represent the mutual fund

t=2009-2013

U_{it} =error term

β=Change in estimated Y when X is varied by one unit

β_0=Estimated value of Y when all variables=0

The Sharpe ratio was calculated by subtracting the risk-free rate from the rate of return for a portfolio and dividing the result by the standard deviation of the portfolio returns:

R_p- R_f)/σ_P

Where R_p = Portfolio Return calculated as the s simply the sum of its capital appreciation and any income generated divided by the original amount of the investment and expressed as a percentage.

R_f = Risk free rate measured as the 90-day Treasury bill rate

σ_P = Standard deviation of the portfolio returns

The Sharpe ratio confirms whether a portfolio's returns are due to smart investment decisions or a result of excess risk. Although one portfolio or fund can reap higher returns than its peers, it is only a good investment if those higher returns do not come with too much additional risk. The greater a portfolio's Sharpe ratio, the better its risk-adjusted performance has been. That is, the better its returns have been relative to the amount of investment risk it has taken. A negative Sharpe ratio indicates that a risk-less asset would perform better than the security being analyzed.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSIONS

4.1 Introduction

This section presents an outcome of findings of the research. The research objective was to establish the relationship between mutual funds financial performance and the number of mobile phone transactions in Kenya. The data was analyzed to generate descriptive statistics as described in this chapter.

Out of the sixty two fund operator regulated by the CMA, only twenty use the mobile fund transfer in their system. Questionnaires were distributed for this study and only fifteen validly completed questionnaires were returned, representing a response rate of 75 per cent. This response rate was fair and conforms to Mugenda (1999) who stipulated that a response rate of 50% is adequate for analysis and reporting, a rate of 60% is good and a rate of 70% and over is excellent.

4.2 Descriptive Analysis

Table 4.1 gives the summary statistics of the main variables that have been included in the model including: minimum, maximum, mean, standard deviation, skewness and kurtosis. The data analyzed are: Sharpe Ratio, number of mobile transactions, treasury bill rate, and amount of mutual funds investment.

Table 4.1: Descriptive Statistics

	Sharp Ratio (Y1)	Mobile Transactions (X1)	Treasury Bill (X2)	Investment Amount ('000) (X3)	
Mean	-0.012	371.220	8.801	904,669.1	8.474
Standard Deviation	1.268	752.728	2.453	1,397,665.9	0.688
Minimum	-3.165	1.000	4.490	15,779.5	7.198
Maximum	2.211	3,402	11.710	6,134,120.0	9.788
Skewness	-0.229	2.750	-0.601	2.1	0.137
Kurtosis	0.165	7.404	-0.580	4.1	-0.851
1st Quartile	-0.466	11.000	8.390	105,814.2	8.023
2nd Quartile	-0.144	46.000	8.410	270,640.3	8.432
3rd Quartile	0.464	296.500	10.825	925,881.6	8.966

The results show that Sharpe Ratio had a mean of -0.012 with a minimum of -3.165, a maximum of 2.211 and standard deviation of 1.268. This depicts that on average, the mutual funds had a negative sharpe ratio; that is, risk-adjusted performance. Thus, on average, the fund portfolio's returns were not due to smart investment decisions but as a result of excess risk. However, some funds (at least a quarter) made returns beyond risk given a third quartile value of 0.464. The returns were mixed and high varied owing standard deviation value which was higher than the mean value. Maximum value of 2.211 shows that some funds experienced very high returns. Sharpe Ratio had skewness of -0.229 and kurtosis of 0.165. This depicts a negatively skewed and flat peaked distribution.

Value of mobile transactions had a mean of 371.220, minimum of 1, maximum of 3,402 and a standard deviation value of 752.7. This shows that on average, the mutual funds had 371.2 mobile transactions in a year. Some funds however had as many as 3,402 annually mobile transactions while others as few as 1. There was less variability in the number of mobile transactions from one mutual fund or one period to the next given a standard deviation value of 752.7 Number of mobile transactions had skewness of 2.75 and kurtosis of 7.404. This points to positively skewed and highly peaked distribution. At least half of the funds had 46 mobile transactions while less than a quarter had 296 transactions.

Treasury bill rate had a mean of 8.801, minimum of 4.49, maximum of 11.71 and standard deviation value of 2.45. Thus, on average Treasury bill rate was 8.8 with a moderate variability. In more than 75% of the period under study, the rate was above 8.3. However, in some periods, the T-bill was as low as 4.5. Treasury bill rate had skewness of -0.601and kurtosis of -0.580. This depicts a negatively skewed and flat peaked distribution.

Amount of invested mutual fund had a mean of 904,669, minimum of 15,779 and maximum of 6,134,120. The descriptive statistics shows that on average, Ksh904,669 was invested. However, this figure was as low as Ksh15,779 in some mutual funds. Standard deviation value of 1,397,665 show high variability in the amount of mutual funds invested. Skewness of 2.1 and kurtosis of 4.1 depict positively skewed and flat peaked distribution.

4.3 Correlation Analysis

After the descriptive analysis, the study conducted Pearson correlation analysis to indicate a linear association between the predicted and explanatory variables or among the latter.

It, thus, help in determining the strengths of association in the model, that is, which variable best explained the relationship between mobile transactions and financial performance as measured Sharpe Ratio. It also helped in deciding which variable(s) to drop from the equation given low linear relationship or multicollinearity.

Table 4.2: Correlation Analysis

Variables		Sharpe	Mobile	Bill	Investment
Sharpe Ratio	Correlation	1			
	Sig	---			
Mobile Transactions	Correlation	.593**	1		
	Sig.	.000			
Treasury Bill	Correlation	.861*	-.235	1	
	Sig.	.023	.066		
Investment Amount	Correlation	-.619*	-.404	.121	1
	Sig.	.032	.071	.350	

**. Correlation is significant at the 0.01 level (2-tailed); *. Correlation is significant at the 0.05 level (2-tailed).

From the Table 4.2, it can be deduced that there was a good, positive and significant correlation between Sharpe Ratio and Mobile Transactions given correlation value (R) of 0.593 at $p < .001$. The results presents a good, positive and significant relationship between Treasury bill and investment returns as measured by Sharpe ratio (R = 0.861; p = .023). However, there was a good, significant but negative correlation between Sharpe ratio and Investment Amount (R = -.619; p = .032).

4.4 Regression Analysis

The linear regression method used for this study was the least square method. This was used to determine the line of best fit for the model through minimizing the sum of squares of the distances from the points to the line of best fit. The regression analysis will utilize the following equation:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where, Y represent Sharpe Ratio, X_1 represent number of mobile transaction, X_2 represent the treasury bill rate, X_3 represent the amount of funds invested, β_0 is regression constant, β_1 to β_3 are regression coefficients.

Table 4.3: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.630[a]	.397	.316	.1744325	2.096

a. Predictors: (Constant), Number of Mobile Transactions, Treasury Bill Rate, and Amount of Funds Invested
b. Dependent Variable: Sharpe Ratio

The model goodness of fit statistics shows that the regression model was good owing to lack of serial autocorrelation as the Durbin Watson value was 2.096. This depict that there is no autocorrelation in the data. The model had a Correlation value of 0.630 which depicts good linear relationship between predicted and explanatory variables. The model was also moderately strong owing to R-square values of 0.397 which was adjusted for errors to 0.316. This depicts that the independent variables explains only 31.6% of the changes in financial performance as measured by Sharpe Ratio.

Table 4.4: Analysis of Variance

	Sum of Squares	df	Mean Square	F	Sig.
Regression	12.471	3	5.9828	4.178	.015
Residual	82.882	54	1.432		
Total	95.353	57			

a. Predictors: (Constant), Number of Mobile Transactions, Treasury Bill Rate, and Amount of Funds Invested
b. Dependent Variable: Sharpe Ratio

Table 4.4 shows that the model was significant owing to F-test value of 4.178 at significance value of 0.015 (p < .05). Belle (2008) stated that insignificant F-significance indicates weak regression model as means of the groups (independent and dependent variables) are equal. Thus, the study's regression model was good.

Table 4.5: Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.1081	0.701		1.803	0.078		
Mobile Transactions	0.0720	.951	0.054	3.762	.014	.751	1.332
Treasury Bill Rate	0.3103	.218	0.265	3.628	.026	.445	2.250
Funds Invested	1.044	.503	0.921	3.429	.019	.384	2.603

a. Dependent Variable: Sharpe Ratio

From the Table above, the following regression equation was established:

Sharpe = 1.1081+ 0.0720Mobile Transactions + 0.3103Treasury Bill Rate + 1.044Funds

Invested   p = .015

From the model, when other factors (Mobile Transactions, Treasury Bill Rate, Funds

Invested) are at zero, the financial performance (Sharpe Ratio) will be 1.1081. Holding

mobile transactions and Treasury bill rate constant, a unit increase in mutual funds

invested would lead to 1.044 increases in mutual funds' financial performance.

Holding other factors (Treasury Bill Rate, Funds Invested) constant, a unit increase in

Mobile Transactions would lead to a 0. 0720 increase in Sharpe Ratio. Furthermore,

holding Mobile Transactions and Funds Invested constant, a unit increase in Treasury Bill

Rate would lead to a 0.3103 increase in mutual funds' financial performance as measured

by Sharpe ratio.

Variance Inflation Factors (VIF) shows that there is lack of collinearity amongst the

independent variables as the VIF values were below the critical value of 10: Mobile

Transactions (1.332), Treasury Bill Rate (2.250) and Funds Invested (2.603). As stated by

Studenmund (2006), the variance (the square of the estimate's standard deviation) of an

estimated regression coefficient is increased because of collinearity. This depicts lack of

collinearity problems in the model.

4.5 Summary and Interpretation of Findings

Sharpe ratio was used to measure the excess return (or risk premium) per unit of deviation

in an investment asset or a trading strategy, typically referred to as risk. The study

established returns as high as 2.21 and high standard deviation of 1.26 compared to a

mean of -0.012. Through the data analysis, it is apparent that mutual funds perform differently due to an array of diverse reasons. Some years accommodate positive performance while others encompass significant risk levels. The higher a fund's Sharpe ratio, the better its returns have been relative to the amount of investment risk it has taken. The higher a fund's standard deviation, the higher the fund's returns need to be to earn a high Sharpe ratio. Conversely, funds with lower standard deviations can sport a higher Sharpe ratio if they have consistently decent returns. However, even though a higher Sharpe ratio indicates a better historical risk-adjusted performance, this doesn't necessarily translate to a lower-volatility fund; fund's risk/return relationship is more proportional or optimal. The high Sharpe ratio depicted the funds better risk-adjusted performance.

The established negative Sharpe ratio indicates that a risk-less asset would perform better than the mutual funds. According to the regression analysis above, money market funds are the most responsive to changes in number of mobile transactions. Since money market funds accommodate cross-sectional investors, they receive the most number of mobile transactions. Moreover, the other mutual funds require significant investments that require direct bank deposits as opposed to mobile money transfers. In Kenya, mobile transfers have a limit of Ksh. 70,000 hence lock out numerous investors who wish to deposit significant funds to their desired companies. As this is not enough, mobile transfers are a recent development in this part of sub-Saharan Africa. Unlike western nations, or Europe countries, Kenya envisaged money transfers through mobile phones in 2008 through M-pesa.

Although the country is developing towards the desired direction, the technology is new to the entire populace. In the same period, the world was facing grave afflictions from the

2008 Global Financial Crisis. After the devastating global effects, 2011 gave rise to yet another atrocity dubbed the European Financial Crisis. This implies that the global arena has not been conducive for local, regional, and global investors. However, through the money market regression analysis from all companies, it is evident that the country is warming up to mobile money transfers that will redesign mutual funds financial performance in the future.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of the main findings and conclusions based on research conducted. The purpose of these conclusions is to address the research objectives. After addressing each research objective, the recommendations will suggest the relevant actions to resolve all the addressed issues.

5.2 Summary

Similar to other studies, this research has unveiled a formidable relationship between mobile transactions and the financial performance of mutual funds. Through the data analysis section, it is apparent that money market funds receive the most mobile transactions than any other mutual funds. This is because mobile transfers restrict users to a defined limit of Ksh70,000 a day. While money market funds accommodate all investors, other funds require significant investments that require direct deposits since the mobile transaction cannot handle such amounts. However, the research notes that the country is responsive to the technology and indicates a looming overhaul in the financial performance of mutual funds in the coming days.

One of the important findings of this study is that fund size is positively associated with higher performance. Larger funds (as shown by the invested amount) perform better suggesting the presence of significant economies of scale in the mutual fund industry. This

finding is consistent among funds. Treasury bills is positively related with fund performance indicating that higher rate tend to lead to better performance.

5.3 Conclusion

Mutual funds are one of the most highly growing products in financial services market. Mutual funds are suitable for all types of investors from risk adverse to risk bearer. Mutual funds have many options of return, risk free return, constant return, market associated return. Mobile transactions play a significant role in determining the financial performance of mutual funds. In Kenya, money market funds accommodate cross-sectional investors; hence, they receive the most number of mobile transactions. Moreover, the other mutual funds require significant investments that require direct bank deposits as opposed to mobile money transfers. Mobile transfers in Kenya have a Ksh. 70,000 threshold hence lock out numerous investors who wish to deposit significant funds to their desired companies. According to the researcher's trajectory, the country's investment climate is conducive to accommodate significant payments through mobile transactions. Once the concerned bodies redesign the current impediment, all funds will experience a change in their financial performance.

The primary factor affecting mutual fund performance is the change in the value of its holdings. In general, share prices rise when the market is up, and mutual funds follow. Since the fund is diversified through many investments (in some cases, more than 100), fund shares aren't as volatile as the prices of individual stocks. If the fund manager has selected his investments carefully, the fund should beat the market averages — although most stock funds, in fact, do not. Cautious fund managers who park a higher percentage of

their assets in cash offer a less risky environment for investors; for that reason, it's good to know the cash ratio of any mutual fund you are researching.

5.4 Recommendations

It is vital for CMA to lobby for increased amounts through mobile transactions. Such a change will go a long way in convincing investors in other funds to use M-pesa among other mobile platforms in the country. The amendment will resolve the current problem that ails other mutual funds hence ensure that technology plays a focal role in determining their performance. Through the ever-dynamic technological advancements, users will have to adjust to a condition, which requires ample time to unravel. Kenyan mobile phone users are yet to clock half the country's population. As the government continues to combat mass poverty among other inhibitions, mutual funds operators have to demystify mobile phone usage in the country. After amending the current legislation curtailing mobile money transfers, and sensitizing the Kenyan population on advantages of adopting technology, mutual funds will experienced a drastic change in terms of performance.

Besides, Mutual Fund is subject to market risk, analyzing particular fund required study of the historical return of funds, risk measurement ratios to evaluate fund. Besides, for high return investors need to invest in diversified funds as different types of funds performed differently. For moderate risk and return, investors should invest in balance funds, for assure return invest in debt and liquid funds.

5.4 Limitation of the Research

Mobile technology is a recent endeavor that seeks to redefine the communications platform. Most consumers are yet to come to terms with numerous adjustments emanating

from mobile telephony. Since consumers are yet to readjust, companies are taking time before implementing necessary changes that require mobile phone usage. In developing countries like Kenya, the government is yet to enforce salient regulatory measures to combat unsuspecting consumers from exploitations. With the rampant adjustments in Kenya, consumers as well as service providers have not taken full advantage of the resource. As most companies redevelop their blueprint, others still rely on the conventional procedures and practices. Data availability is another inalienable limitation inherent in the Kenyan market. Since most companies are on the verge of growth, competition is at its prime level. Companies fear disclosing intricate information hence curtailed the research endeavor.

Besides, market risk to the mutual funds returns might be linked to world events. Thus, the interdependence negates the wisdom in limiting the factors affecting mutual funds' financial performance only to Kenya's macroeconomic variables. For example, rising oil prices and terrorism might make investors more pessimistic about the near term future thus affect returns to the mutual funds. If the fund is concentrated in a single sector, the performance of stocks in this particular family, and specific economic factors, are the main drivers on fund price. Funds that hold foreign stocks, for example, will improve when the dollar weakens, simply because overseas shares become more valuable. Consumer stocks respond to the general state of the economy, while energy funds invested in oil and gas do well when crude oil prices are on the rise. Bond funds will perform well when interest rates fall and bond prices rise. Besides, use a large sample, contrary to the majority of previous studies that used national funds, might not account for heterogeneity in fund size.

5.5 Suggestion for Further Research

Further research should concentrate on how the government, service providers, and corporate bodies sensitize the masses on the need of mobile phone-based transactions. Such endeavors would go a long way in assisting the country attain notable milestones in the business sector. Also further research should check on the effect of mobile platform in preventing fraud cases in the financial sectors.

REFERENCES

Agarwal, R., & Karahanna, E. (2000).Time Flies when you're having fun: Cognitive absorption and beliefs about information technology usage.*MIS Quarterly*, 24(4): 665-69.

Anurag, S., Tyagi, R., & Raddi, S. (2009). Mobile Payment 2.0: The Next-Generation Model, in*HSBC"s Guide to cash, Supply Chain and Treasury Management in Asia Pacific.Ed.178-183.*

Arnold, S. (1970). *Mutual funds*. New York: Practising Law Institute.

Arunga J.&Kahora, B. (2007).Cell phone Revolution in Kenya.International Policy Network.

Boone, L. E.,& Kurtz, D. L. (2011).*Contemporary business: with socialnomics*. Hoboken, NJ: Wiley Custom Learning Solutions.

Christensen, C. M., Anthony, S. D., & Roth, E. A. (2004). *Seeing what's next: using the theories of innovation to predict industry change*. Boston: Harvard Business School Press. *Customs performance measures*. (1993). Washington, D.C.: The Office.

Communications Commission of Kenya, (2008/09). Communications Statistics Report Second Quarter. <http: //www.cck.go.ke.> Accessed on September 17, 2014.

Cui, J., Jong, F. D., & Ponds, E. (2011). Intergenerational risk sharing within funded pension schemes. *Journal of Pension Economics and Finance*, *10*(01), 1-29.

Davis, F D (1989).Perceived Usefulness, Perceived Ease of Use and User Acceptance of Information Technology.*MIS Quarterly,* 13 (3), 319-339.

Doll, W. J., Hendrickson, A., & Deng, X. (1998).Using Davis's Perceived Usefulness and Ease-of-use Instruments for Decision Making: A confirmatory and multi-group invariance analysis.*Decision Sciences,*29, 839-869.

Eagle, N. (2005).Entrepreneurship and Education through Mobile phones in Kenya.The MIT Media laboratory, Human Dynamics group.

Elder, L., & Rashid, A.T. (2009).Mobile Phones and Development: An analysis of IDRC-Supported Projects. *The Electronic Journal on Information Systems in Developing Countries* 36, 2, <http: //www.ejisdc.org.> Accessed on September 19, 2014.

Epstein, M. J., & Manzoni, J. F. (2002).*Performance measurement and management control: a compendium of research*. Amsterdam: JAI.

Fernando, D. (2003). *The global growth of mutual funds*. Washington, D.C.: World Bank, Development Research Group, Finance.

Fink, M. P. (2008). *The rise of mutual funds an insider's view*. New York: Oxford University Press.

Gefen, D., and Straub, T. (2000).The Relative Importance of Perceived Ease-of-use In IS Adoption: A study of e-commerce adoption. *Journal of the Association for Information Systems* 1(8), 1-30.

Government of Kenya, (1999) Labor Force Survey, Kenya National Bureau of Statistics.<http://www.knbs.go.ke.> Accessed September 17, 2014.

Government of Kenya, (1999) National Medium and Small Enterprises Baseline Survey, *Kenya National Bureau of Statistics*.<http: //www.knbs.go.ke.> Accessed September 17, 2014.

Government of Kenya, (2008).Kenya National Bureau of Statistics. http://www.knbs.go.ke. Accessed September 17, 2014.

Harr, D. J., & Godfrey, J. T. (1991). *Private sector financial performance measures and their applicability to government operations*. Montvale, N.J.: National Association of Accountants.

Hermes Newsletter (2001). Mobile Commerce and its Future Electronic Retailing and emarketing. 11. Edited by MobiCom Team. http://www.eltrun.aueb.gr. Accessed September 19, 2014.

Hinz, R. P. (2010). *Evaluating the financial performance of pension funds*. Washington, D.C.: World Bank.

Hughes, N., and Lonie S. (2007). M-PESA: Mobile Money for the Unbanked.

Jackson, C M., Chow, S., Leitch, and R. A. (1997).Toward An Understanding of the Behavioral Intention to Use an Information System. *Decision Sciences* 23, 587-605.

Joseph H., Rolph E., Ronald L., and William C.,(2007). *Multivariate Data Analysis.* Upper Saddle River, New Jersey: Prentice Hall.

Kane, A., & Santini, D. (1992). *Lessons from the growth history of mutual funds* (Rev. Sept. 1992. ed.). La Jolla, CA: Graduate School of International Relations and Pacific Studies, University of California, San Diego.

Khodawandi, D., Pousttchi, K., and Turowski, K. (2003). Acceptance of Mobile Payment Procedures In Germany. *Proceedings of the 3rd International Workshop Mobile Commerce,* Augsburg, Germany.

Kreyer, N., Pousttchi, K., and Turowski, K. (2002).Standardised Payment Procedures as Key Enabling Factor for Mobile Commerce.*Proceedings of the 3rd International Conference on Electronic Commerce and Web Technologies*, 400 -409.

Mallat, N. (2007). Exploring Consumer adoption of Mobile Payments- A Qualitative Study. *The Journal of Strategic Information Systems*, 16 (4), 413-432.

Mugenda, M., and Mugenda, A. (2003). *Research methods: qualitative and quantitative approaches.* African centre for technology Studies, Nairobi.

Mutual funds. (1992). Madison, WI: Investor Education Program, Office of the Commissioner of Securities.

Ndubisi, N. O., Richardson, S. (2002). The Entrepreneurs' Technology Acceptance Model.*Academy of Entrepreneurship Journal.*

Njenga, A. D. K.(2009). Mobile phone banking: Usage experiences in Kenya. <http://www.strathmore.edu/pdf/ictc-08/mobile-banking.pdf >Accessed on 30th August, 2014.

Nunnally, J.C. (1978). *Psychometric theory* (2nd Edition). New York: McGraw-Hill.

Omwansa, T. (2009).M-Pesa progress and prospects: Innovations case discussion. <http://www.strathmore.edu/pdf/innov-gsma-omwansa.pdf.>Accessed August, 30, 2014.

Orodho, A. J., and Kombo, D. K. (2002). *Research methods.* Kenyatta University, Nairobi.

Pagani, M (2004). Determinants of Adoption of Third generation Mobile Multimedia services, *Journal of Interactive Marketing*, 18 (2).

Pavlou, P A. (2003).Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce* 7(3), 69-103.

Porteous, D. (2006).*The enabling environment for mobile banking in Africa.* London: DFID.

Pousttchi, K. (2003). Conditions for acceptance and usage of mobile payment procedures.MPRA Paper 2912.

Pousttchi, K., &Wiedemann*, D G* (2007).What Influences Consumers´ Intention to Use Mobile Payments?*Proceedings of the 2007 LA Global Mobility Roundtable*. Los Angeles, California, USA.

Rogers, E M (1995).*Diffusion of Innovations*. New York: Free Press.

Rouwenhorst, K. G. (2004). The Origns of Mutual Funds. Yale ICF Working Paper No. 04-48, Yale International Centre of Finance, Yale University School of Management , New Haven.

Roy, S., & Ghose, S. (2006). Converting internet non-users to internet users and to online buyers. University of New Haven: University of Wisconsin, Milwaukee.

Safaricom, (May, 2009), *Financial Year 2008/2009; Annual Results Presentation and Investor update*.

Saviotti, P. (1991). *Evolutionary theories of economic and technological change: present status and future prospects*. Chur: Harwood Academic Publishers.

Sekino, H., Kwon, J. and Bong S H., (2007). Mobile Payments: Mobile operator Market Opportunities and Business Models, Diamond Management and Technology Consultants Inc. <http://www.diamondconsultants.com> Accessed September, 03, 2014.

Siau, K, Sheng, H., Nah, F. and Davis, S. (2004). A qualitative investigation on consumer trust in mobile commerce.*International Journal of Electronic Business,* 2(3), 283-300.

Speedfacts Online Research GmbH (2001).*MBanking – the future of Personal Financial Transactions?Franfurt, Germany.*

Taga, K., and Karlsson, J. (2004).*Arthur D. little Global M-Payment Report, Vienna, Austria.*

Terraza, V. (2013).*Understanding investment funds insights from performance and risk analysis*. Basingstoke: Palgrave Macmillan.

Tolentino, P. E. (1993). *Technological innovation and Third World multinationals*. London: Routledge.

Venanzi, D. (2012). *Financial performance measures and value creation the state of the art*. Milan: Springer.

Venkatesh, V., and Davis, F. D. (2000).Why don't men stop to ask directions? Gender, social influence, and their role in technology acceptance and usage behavior.*MIS Quarterly* 24.186-204.

Viehland, D., and Leong, R S Y (2007).Acceptance and Use of Mobile Payments.Proceedings of the 18th Australasian Conference on Information Systems.Toowoomba.

APPENDICES

Appendix I: Letter Of Introduction

Dear Respondent,

REQUEST FOR RESEARCH DATA

I am a **Master of Business Administration** student at the University of Nairobi. I am required to submit as part of my course work assessment, a research project report on **the effect of mobile transactions on the financial performance of mutual funds in Kenya.** I am kindly requesting you to assist me in this study by filling the attached Data Collection Form to the best of your ability as it applies to your institution.

Please be assured that the information you provide will be used solely for academic purposes and all responses will remain confidential.

Thank you very much for your time.

John Raymond Akoko,

Researcher

Appendix II: Data Collection Form

Date:………………………………………………………..

Mutual Fund:…………………………………………………

Data	2009	2010	2011	2012	2013
Total mutual fund (Sharpe Ratio)					
Total Number of mobile transaction					
Treasury bill rate					
Amount of Funds Invested					
Logarithm of Funds Invested					

Comments:………………………………………………………….

Appendix III: Data

Year	Mutual Fund Name	Sharpe Ratio	No Of Mobile Transactions	Treasury Bill	Investment Amount ('000)	Log (Amt)
2009	Old Mutual Equity Fund	-0.32918	134	8.39	3,338,919.80	9.523
2009	Old Mutual Money Market Fund	-0.503	139	8.39	3,460,278.65	9.5391
2009	Old Mutual Balanced Fund	-0.37557	32	8.39	802,477.47	8.904
2009	Old Mutual East Africa Fund	-0.18018	1	8.39	15,779.50	7.1980
2009	Old Mutual Bond Fund	-0.11937	4	8.39	96,687.21	7.985
2009	Zimele Balanced Fund	-0.70331	36	8.39	393,672.81	8.595
2009	Zimele Money Market Fund	-0.11171	11	8.39	114,941.26	8.060
2010	ICEA Equity Fund	2.144032	15	4.49	264,233.00	8.421
2010	ICEA Growth Fund	2.211254	8	4.49	149,127.89	8.173
2010	ICEA Money Market Fund	1.957105	62	4.49	1,089,526.80	9.037
2010	ICEA Bond Fund	-0.74199	3	4.49	51,477.84	7.71
2010	Old Mutual Equity Fund	0.323597	279	4.49	3,895,762.37	9.590
2010	Old Mutual Money Market Fund	-0.17913	261	4.49	3,647,653.96	9.562
2010	Old Mutual Balanced Fund	0.059857	63	4.49	880,722.04	8.944
2010	Old Mutual East Africa Fund	1.983634	2	4.49	31,716.32	7.501
2010	Old Mutual Bond Fund	1.775336	16	4.49	225,748.73	8.353
2010	Zimele Balanced Fund	-1.49036	529	4.49	356,623.47	8.55
2010	Zimele Money Market Fund	2.099451	454	4.49	306,284.80	8.486
2011	ICEA Equity Fund	-0.15918	20	9.94	270,640.31	8.432
2011	ICEA Growth Fund	-0.29705	10	9.94	131,728.81	8.119
2011	ICEA Money Market Fund	-0.61999	68	9.94	901,920.77	8.955
2011	ICEA Bond Fund	-1.13272	4	9.94	49,198.07	7.691
2011	Old Mutual Equity Fund	-2.14894	314	9.94	2,084,564.00	9.319
2011	Old Mutual Money Market Fund	-0.25262	572	9.94	3,800,354.00	9.579
2011	Old Mutual Balanced Fund	-2.1585	80	9.94	529,095.00	8.723
2011	Old Mutual East Africa Fund	-0.42865	4	9.94	28,038.00	7.447
2011	Old Mutual Bond Fund	-0.79586	18	9.94	118,159.00	8.072
2011	Zimele Balanced Fund	-3.16533	1,227	9.94	251,633.64	8.40
2011	Zimele Money Market Fund	-0.14065	1,460	9.94	299,611.38	8.476
2012	CIC Money Market Fund	1.774715	186	11.71	1,709,975.01	9.239
2012	CIC Balanced Fund	1.738598	13	11.71	117,736.49	8.070

2012	CIC Fixed Income Fund	1.503599	3	11.71	25,264.34	7.402
2012	CIC Equity Fund	1.886429	8	11.71	75,750.68	7.879
2012	ICEA Equity Fund	1.183356	46	11.71	413,822.90	8.6168
2012	ICEA Growth Fund	0.284294	19	11.71	168,118.89	8.225
2012	ICEA Money Market Fund	-0.07491	106	11.71	949,842.34	8.977
2012	ICEA Bond Fund	-2.57107	4	11.71	38,998.64	7.591
2012	Old Mutual Equity Fund	-0.88349	343	11.71	1,789,354.00	9.252
2012	Old Mutual Money Market Fund	1.979739	1,032	11.71	5,377,897.00	9.730
2012	Old Mutual Balanced Fund	-0.97943	88	11.71	457,550.00	8.660
2012	Old Mutual East Africa Fund	-0.34049	5	11.71	25,940.00	7.417
2012	Old Mutual Bond Fund	-0.38033	18	11.71	96,436.00	7.984
2012	Zimele Balanced Fund	-2.5739	2,158	11.71	195,348.53	8.291
2012	Zimele Money Market Fund	-0.14367	3,230	11.71	292,401.32	8.465
2013	CIC Money Market Fund	0.119525	332	8.41	2,537,921.95	9.404
2013	CIC Balanced Fund	0.037735	19	8.41	143,854.88	8.157
2013	CIC Fixed Income Fund	-0.22582	3	8.41	25,312.71	7.403
2013	CIC Equity Fund	0.873544	17	8.41	131,145.57	8.117
2013	ICEA Equity Fund	1.080775	67	8.41	616,794.77	8.790
2013	ICEA Growth Fund	0.558043	27	8.41	245,667.60	8.39
2013	ICEA Money Market Fund	0.11223	117	8.41	1,073,790.64	9.03
2013	ICEA Bond Fund	-0.24672	4	8.41	41,187.89	7.61
2013	Old Mutual Equity Fund	0.173111	697	8.41	2,018,976.00	9.30
2013	Old Mutual Money Market Fund	0.338028	2,116	8.41	6,134,120.00	9.787
2013	Old Mutual Balanced Fund	0.370931	184	8.41	534,035.00	8.77
2013	Old Mutual East Africa Fund	0.233609	11	8.41	30,950.00	7.49
2013	Old Mutual Bond Fund	-0.2566	30	8.41	87,113.00	7.940
2013	Zimele Balanced Fund	-2.66572	1,791	8.41	149,508.57	8.17
2013	Zimele Money Market Fund	-0.14949	3,402	8.41	284,083.18	8.45

Appendix IV: List Of Fund Operators

1	African Alliance Kenya Shilling Fund.	32	CIC Equity Fund
2	African Alliance Kenya Fixed Income Fund.	33	Madison Asset Equity Fund
3	African Alliance Kenya Managed Fund.	34	Madison Asset Balanced Fund
4	African Alliance Kenya Equity Fund.	35	Madison Asset Money Market Fund
5	British-American Money Market Fund.	36	Madison Asset Treasury Bill Fund
6	British-American Income Fund.	37	Madison Asset Bond Fund.
7	British-American Balanced Fund.	38	Dyer and Blair Diversified Fund
8	British-American Managed Retirement Fund.	39	Dyer and Blair Bond Fund
9	British-American Equity Fund.	40	Dyer and Blair Money Market Fund
10	Stanbic Money Market Fund.	41	Dyer and Blair Equity Fund
11	Stanbic Fixed Income Fund.	42	Amana Money Market Fund
12	Stanbic Managed Prudential Fund.	43	Amana Balanced Fund
13	Stanbic Equity Fund	44	Amana Growth Fund
14	Stanbic Balanced Fund	45	Diaspora Money Market Fund
15	Commercial Bank of Africa Money Market Fund.	46	Diaspora Bond Fund
16	Commercial Bank of Africa Equity Fund.	47	Diaspora Equity Fund
17	Zimele Balanced Fund	48	First Ethical Opportunities Fund
18	Zimele Money Market Fund	49	GenCapHazina Fund
19	Suntra Money Market Fund	50	GenCapEneza Fund
20	Suntra Equity Fund	51	GenCapHela Fund
21	Suntra Balanced Fund	52	GenCapIman Fund
22	ICEA Money Market Fund	53	GencapHisa Fund

23	ICEA Equity Fund	54	UAP Money Market Fund
24	ICEA Growth Fund	55	UAP High Yield Bond Fund
25	ICEA Bond Fund	56	UAP Enhanced Income Fund
26	Standard Investment Equity Growth Fund	57	UAP Dividend Maximizer Fund
27	Standard Investment Fixed Income Fund	58	Old Mutual Equity Fund.
28	Standard Investment Balanced Fund	59	Old Mutual Money Market Fund.
29	CIC Money Market Fund	60	Old Mutual Balanced Fund.
30	CIC Balanced Fund	61	Old Mutual East Africa Fund.
31	CIC Fixed Income Fund	62	Old Mutual Bond Fund