

Effects of M-Banking Services on Financial Performance and Market Share of Commercial Banks Listed at the Nairobi Securities Exchange, Kenya

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Abstract: *M-Banking is changing how customers access and use banking services. Banks have adopted M-Banking as one of their service delivery platforms, and innovation is ongoing to find more ways of enhancing these services. This research examined whether the nature of M-Banking services offered by listed banks is correlated to their market share and financial performance. The general objective of the project was to analyze the impact of M-Banking on the performance of listed banks in Kenya. Consequently, the specific objective of this study involved determining the effect of mobile top up, fund transfers, bill payment and balance enquiry on financial performance and market share of listed banks in Kenya. The study was informed by two theories namely Theory of Planned Behavior, Technology Acceptance Model, Social Construction of Technology Theory and the KANO Model. The study considered the product features of M-Banking services, analyzed their impact on market share, and determine their effects on the financial performance of listed banks. The study adopted an exploratory research design. The main respondents in this study were the functional heads of M-Banking in listed banks. The two main sources of data were publicly available financial data from listed banks, and data from respondents gathered using a questionnaire. The study had both qualitative and quantitative results which both were fundamental to the achievement of the stated objectives when using exploratory design methodology. Data analysis employed the Statistical Package for Social Sciences (SPSS) to explore significant relations among the research variables, using descriptive and inferential statistical techniques. Linear regression techniques were used to establish the strength of the independent and the dependent variable. The multiple linear regression is significant ($R^2=0.599$, $F(8, 95)=21.556$, $p<0.05$). The findings further suggested there were significant relationships between mobile top up, fund transfers, bill payment and balance enquiry on financial performance and market share of listed banks in Kenya. The significance of this study is that it will reveal the impacts of M-Banking services on market share and the financial performance of listed banks. The study recommends that commercial Bank should come up with flawless and reasonable M-banking rates which create a common platform for all banking institutions since this will enhance fair market completion and thus barring financial institutions from customer exploitation.*

Key Terms: *M-Banking, M-Payment, Financial Performance, Market Share, Kano Model*

1. INTRODUCTION

1.1. Background of the Study

According to Kamau, (2003), structural weakness in the financial industry in Kenya limited consumer access to money transfer services, especially in rural areas and for low-income people. This was because banks were mainly concentrated in urban centers and had restrictive conditions that constituted access barriers to their services. The collapse of money transfer services such as telegraphic money transfers by the Kenya postal Corporation (POSTA) compounded this problem. Before the introduction of Mobile Money Transfer, the only option available to many Kenyans was to send money through friends, relatives, and via bus companies. Generally, commercial banks were major players in the money transfer systems in Kenya. They mainly handled large users and to a smaller extent, low income users. The main services among the commercial bank were telegraphic money transfer, electronic funds transfers, and bank drafts. In addition, payments via bank cheques were a preferred option and were often the required means of paying school fees. Western union and other similar services in Kenya, most of which operate through commercial banks, are still used almost exclusively to receive money into the country as opposed to sending it.

In recent years, several banks have also embraced M-Banking technologies enabling customers to access their bank accounts via their mobile phones. Other mainstream banks that have joined the fray of M-Banking in Kenya include, Barclays Bank of Kenya, Kenya Commercial Bank, Equity Bank, Cooperative Bank of Kenya, Commercial Bank of Africa, National Bank of Kenya, CFC Stanbic, and the Standard Chartered Bank. Apart from banks, several microfinance institutions such as Jamii Bora, K-Rep, and Faulu Kenya have introduced SMS-based services that allow their clients to view their bank balances, request account statements and transfer money.

According to Omwansa (2009), several factors help explain the phenomenal growth of M-banking in Kenya. The three main factors are the high rate of mobile phone uptake, the high demand for financial services by the middle and low income group, and the low cost of money transfer through mobile phones (OECD, 2013).

The opportunity to bank the unbanked is growing with the expansion of phone usage. Low-income earners no longer need to use scarce time and financial resources to travel to distant bank branches. In addition, since M-Banking transactions are cheaper to process than transactions at an automated teller machines (ATM) or bank branches, banks can still make money handling while handling low volume transactions (Booz Allen 2003). Banking through mobile phones has been common in developed countries for years. The main challenge that M-Banking seems to be solving is making basic financial services more accessible to millions of poor people across the world (GSM Association 2006).

Technology has been the key driver of change in how the banking industry operates. Gone are the days of the grand, marbled lobbies that were designed to instill a sense of permanence and awe in the customer. Today the trend is more towards a residential ambience, aimed making the customer feel at comfortable. The ATM was one of the key innovations that influenced banking trends and it remained so until the emergence of online banking.

According to research findings by Research solutions on the use of mobile money transfer services by the informal sector groups carried out in 2008, 47% of respondents said they had used their cell phones for banking services, compared to only 19% of urban respondents in 2007. The numbers were even more dramatic when the informal sector groups' users were asked about their intentions for next year. An additional 30% expected to begin using M-PESA services (Research Solutions, 2008). These informal groups included women self-help groups, informal sector artisans and SME's. These informal sector groups transact with small amounts of money, ranging from a few hundred shillings up to fifty thousand shillings.

Although the core business of the telecommunication companies was to provide voice services, the companies have diversified into offering services like data, M-Payments, M-Banking and most recently M-Health. Notable impact however has been in banking services where the mobile phone has literary transformed conventional banking in Kenya and beyond. The first level of M-Banking was M-Payments, where the subscribers used financial services between mobile phones only. This form of banking, also known as transformational banking, targeted persons that do not hold a bank account with commercial banks (Porteous, 2006). However, with increasing competition and the realization by the banks and other financial institutions that MPESA was a force to reckon with and will be around in the foreseeable future, banks started innovative products in partnership with the telecommunication providers to have the banked and unbanked population linked to their bank accounts via cell phones. This gave birth to a new form of M-Banking known as additive banking. According to Porteous, (2006), in additive M-Banking, mobile phones are used as a channel to an existing operational bank account.

1.2. Statement of the Problem

Commercial banks in Kenya have all adopted M-Banking as one of the key modes of services delivery. Needs for payment and transactional services are not always well served by conventional banks since they do not always find it easy or cost effective to adopt a full- feature package for banking services (Higgins, Kendall & Lyon, 2012). Mobile Money Transfer services can be used to raise efficiency and boost business growth through cheap, efficient and reliable money service support systems that reduce the need for cash transaction and the risks associated. The reasons for introducing M-Banking services range from the desire to be industry-leading technologically, cost reduction, and general improvement of service delivery. These banks hoped that with the introduction of M-Banking,

they would become more relevant to customer needs and in the process would improve their performance on various business fronts. While all banks have implemented various types of M-banking services, there lacks a review of the actual effects of the services on the performance of commercial banks. This study sought to address this problem with a specific focus on the market share and profitability of commercial banks. The problem statement of this study was as follows, does the introduction of M-Banking by commercial banks in Kenya have an impact on their profitability and market share?

1.3. General Objective

The general objective of this project was to analyze the effects of M-Banking Services on the financial performance and market share of listed banks in Kenya.

1.3.1. Specific Objectives

1. To determine the effect of mobile top up on financial performance and market share of listed banks in Kenya.
2. To determine the effect of fund transfers on financial performance and market share of listed banks in Kenya.
3. To examine the effect of bill payment on financial performance and market share of listed banks in Kenya.
4. To determine the effect of balance enquiry on financial performance and market share of listed banks in Kenya.

1.3.2. Hypotheses

The study sought to explore how the m-banking services influence financial performance and market share of listed banks in Kenya. Subsequently, the hypothesis links the four independent variables and the dependent variable. The four (4) null hypotheses are:

1. **H₀₁** There is no significant relationship between mobile top up and financial performance and market share of listed banks in Kenya.
2. **H₀₂** There is no significant relationship between mobile fund transfer and financial performance and market share of listed banks in Kenya.
3. **H₀₃** There is no significant relationship between bill payment and financial performance and market share of listed banks in Kenya.
4. **H₀₄** There is no significant relationship between balance enquiry and financial performance and market share of listed banks in Kenya.

2. LITERATURE REVIEW

2.1. M- Banking

The terms m-banking, m-payments, m-transfers and m-finance can also be referred collectively to a set of applications that enable people to use their mobile telephones to manipulate their bank accounts, store value in an account linked to their handsets, transfer funds, m-banking or even access credit or insurance products.

There is no universal form of m-banking; rather, purposes and structures vary from country to country. The systems offer a variety of financial functions, including micropayments to merchants, bill-payments to utilities, transfers between individuals, and long-distance remittances. Currently, different institutional and business models deliver these systems. Some are offered entirely by banks, others entirely by telecommunications providers, and still others involve a partnership between a bank and a telecommunications provider (Porteous, 2006).

2.2. Mobile Top Up

All listed banks in Kenya provide Mobile top up services via Mbanking platforms. All the respondents indicated that their banks support mobile top up for their clients. This service enables account holders to buy credit from their mobile phone service provider. The demand for mobile top up alternatives become significant as more and more Kenyans became connected using mobile phones. Credit for mobile phones is considered a priority by most Kenyans who own a mobile phone (cite). Banks customers therefore expect to be able to access credit through their bank accounts. The emergence of postpaid services by mobile phone companies has since transformed the mobile top up service into a bill payment service since some customers now pay for their airtime monthly alongside other utility payments.

2.2.1. Bill Payment

All banks included in this study support bill payment in their M-Banking platforms. Every month, utilities such as KPLC, Nairobi Water and Sewerage Company, among many others send out tens of thousands of bills to customers in their areas of service. Such companies were initially forced to invest in complex revenue management systems to streamline revenue collection. Banks came in to support this function by linking their systems with the needs of the utilities. The situation now is that clients can now pay their bills by depositing the money in a bank. All banks now have made it possible for their clients to collect payments for bills via M-banking, a feature that makes it easy for the companies to collect their revenues.

2.2.2. Funds Transfer

All the respondents indicated that their banks allow their customers to use M-Banking services to transfer funds between linked accounts. This essentially means that if one has more than one account in a given bank, such a customer can move funds between these accounts using M-Banking facilities. This service is useful for business, institutions and individuals who operate different accounts. It is common for businesses and institutions to operate one or more accounts account for revenues, and others for managing payments such as writing check to suppliers, payroll, among others. The fact that all banks interviewed have this service indicates that the market requires this service.

2.3. Conceptual Framework

Conceptual framework is a scheme of concept (variables) which the researcher operationalizes in order to achieve the set objectives, Mugenda and Mugenda, (2003). Independent variables are variables that a researcher manipulates in order to determine its effect of influence on another variable, Kombo and Tromp (2006), states that independent variable also called explanatory variables is the presumed change in the cause of changes in the dependent variable; the dependent variable attempts to indicate the total influence arising from the influence of the independent variable Mugenda and Mugenda, (2003).

The KANO model in figure 1 provides an insightful frame of reference for the identification of study variables for this project. This project seeks to find out how M-Banking services affect the profitability and market share of listed banks. The KANO model, with its emphasis on product features, provides a valid approach in the analysis of M-Banking products. Its use makes it easy to draw actionable conclusions in regards to the efficacy of current M-Banking products as offered by different banks. The model offers this study three key concepts that will be helpful when analyzing the data. These concepts include delighters, satisfiers, and dissatisfiers. These three variables play a role in the profitability and market share of commercial banks. However, other variables may intervene in the results observed as a result of offering M-Banking services. Conceptually, they may be termed as the strategic direction and business environment of the banks. The four factors identified here include regulatory factors, internal bank policies, entrepreneurial behavior, and the operational efficiency of the banks.

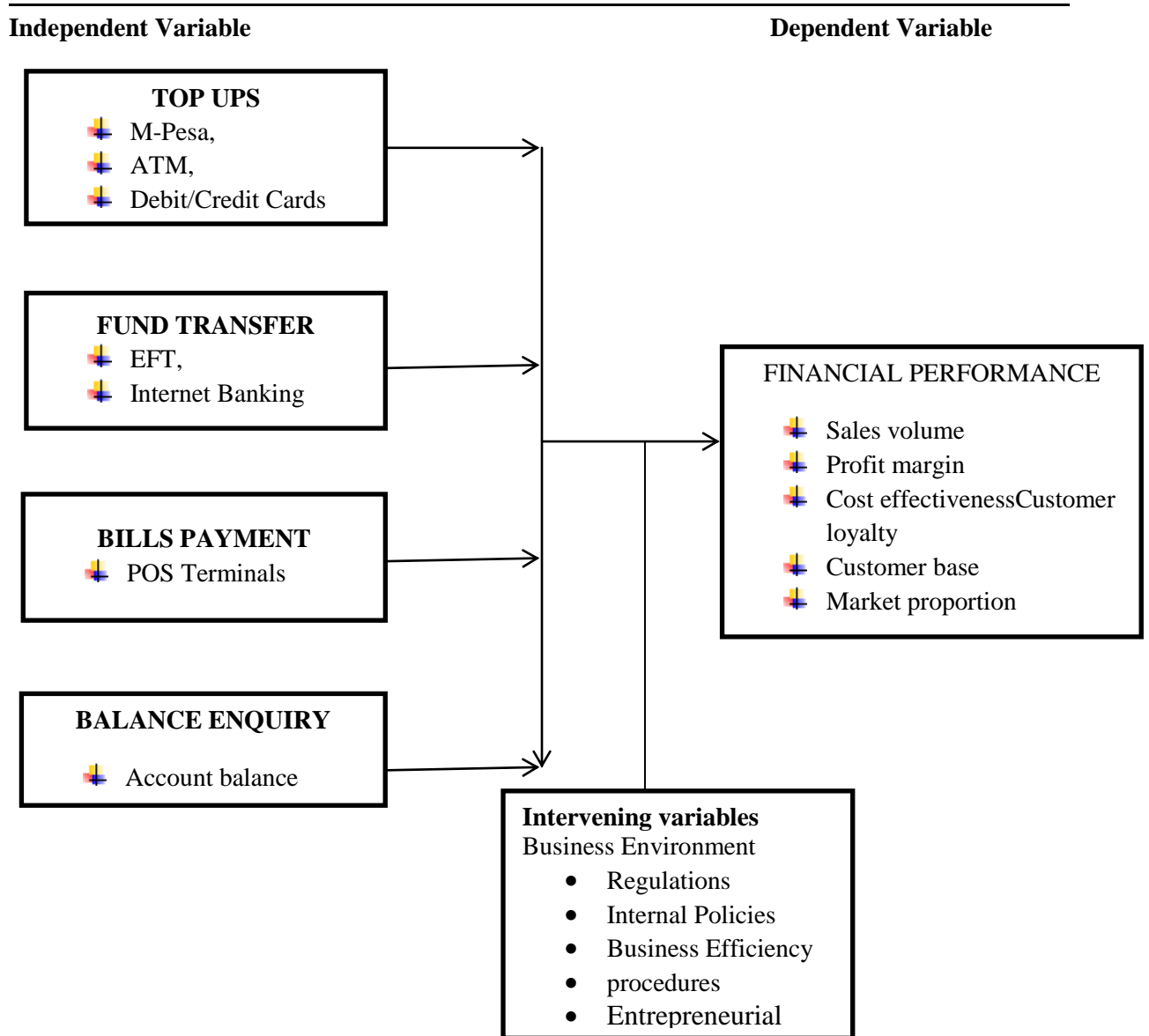


Figure1. Conceptual Framework

3. RESEARCH METHODOLOGY

3.1. Research Design

This study adopted a mixed methods research design composed of both descriptive and explanatory research methods. Kothari (2003) asserts that an exploratory research design is a flexible design that allows the researcher to consider many different aspects of a problem hence helping the researcher to gain new insights and ideas about a problem. Saunder et al (2003) further posits that an exploratory research is used principally to gain a deeper understanding of something. Newman (2008) reinforces this claim by pointing out that this design is suitable when conducting research into an issue or problem where there are few or no earlier studies.

3.2. Population

According to Mugenda and Mugenda (2003), a population is an entire group of individuals or events or objects having common observable characteristics that conform to a given specification. Newman (2008) defines population as a larger collection of all the subjects from which a sample is drawn. The target population entails the specific population that the researcher intends to carry the study. For this study, the target population comprised all eleven listed banks that have an M-Banking service. The population of this study included all the 11 listed banks in Kenya.

3.3. Sampling and Sampling Techniques

The mode of sampling chosen for this study is purposive sampling. This arises from the difference in corporate structures of different commercial banks. In this case, departments heads whose roles include the management of the aspects that form the variables of this project was interviewed. In any case, the target respondents for this study constituted the functional heads of M-Banking in listed banks and other staff within the division who have adequate understanding of the variables being studied. After the first set of interviews, between three responds will be picked to help validate findings, and to help with any clarifications needed on the data collected. The study was done within Nairobi because all the firms have a presence in Nairobi, and there is no clear advantage in pursuing a more elaborate geographical distribution.

3.4. Instruments

A combination of instruments was used in this study. A structured questionnaire consisting of both open and closed ended questions was used (Singleton et. al.2010). This method allowed for neutrality and provided rational responses (Punch, 2009). According to Bryman (2012) the questionnaire translates the research objectives into specific questions and answers for each question will provide the data for hypothesis testing. The advantage of a questionnaire over other instruments is that information can be collected from large samples. Open-ended questions were used to collect data from the respondents and provide respondents with an opportunity to answer questions without introducing bias. The data sought was on a number of issues including market share on adoption of M-Banking, financial performance of providers on the adoption of M-Banking, and the effect of market share and financial performance.

3.5. Data Collection Procedure

A pilot test was performed on the questionnaires of the first 10 respondents to allow for fine-tuning and testing of the accuracy of responses. Anyone involved in the pretest was not included in the actual research. The results of the pretested questionnaires were discussed with the supervisors and revisions made to capture the missing information. To administer the questionnaires, the researcher relied on the help of three research assistants who were trained on testing all aspects of the research both before and after pretesting.

Secondary data was extracted from existing literature (both theory and empirical studies) such as company financial reports, journals, articles, research papers, magazines, statistical reports, catalogues, and books among others that reflects the challenges of M-Banking adoption. This study also analyzed a number of relevant studies and surveys that have been conducted by different researchers that reflect and discuss the problem.

Primary data was collected using research questionnaires and interviews during the survey. Questionnaires were administered on a drop and pick basis. To ensure accurate data collection, research assistants were trained on all aspects of the survey including ethics in research.

3.6. Data Processing and Analysis

Data analysis refers to the examination of collected data in order to make deductions and draw inferences. At the end of data collection, the completed questionnaires were inspected for completeness, edited for errors and omissions before being coded and the data captured. According to Sekaran (2003); Somekh and Lewin (2005), editing involves checking and adjusting any errors or omissions on questionnaires. Its purpose ensures completeness, interpretation of ambiguous answers, consistency, and elimination of unusable data (Mugenda and Mugenda, 2003). Responses to the questionnaires were coded numerically, entered in an excel spreadsheet for analysis, and cleaned. Quantitative data was then imported into SPSS for further analysis

In this study, data was organized and summarized using a combination of descriptive statistics. Statistical tools like frequency distributions, measures of central tendencies like means, medians and modes, and measures of dispersion like range and standard deviation were used to summarize quantitative variables (Sprinthall, 2013).

Data measured on nominal and ordinal scales were summarized using frequency distribution with mode measuring central tendency (Norusis, 2008). Central tendency on interval and ratio data was measured using mean and median, with range and standard deviation measuring dispersion. This

group of data was then categorically and analyzed to yields ordinal data that would finally be summarized using frequency distributions. Financial ratios like ROI, and ROCE were calculated for the period before and after the adoption of M-Banking and compared. Equally, trend analysis was done to determine and predict the movement of the revenues before and after the adoption of M-Banking.

Categorically, analysis was done on all keys to yield ordinal data. All the data measured on a nominal scale were quantified using dummy variables for purposes of doing higher levels of analysis. Daniels (2005) described a dummy variable as a variable that assumes only a finite number of values such as 0 or 1 for the purpose of identifying the different categories of a qualitative variable. This implies that the variable does not have a quantitative value. The rest of the variables measured in interval scale will be included. In addition content analysis was used to analyze qualitative information collected in the survey. This was used to support the results of quantitative analysis in drawing conclusions and recommendations.

The results and findings of the analysis were be presented using tables, graphs, and charts to measure the strength and nature of relationships correlation measures and the extent of interdependence where two variables are linearly related (Lucy, 2006). If variables are correlated then a change in one variable is accompanied by a proportionate change in another variable. Correlation coefficient (R) is a measure of correlation between two variables. If variables are independent $r = 0$, if dependent then $r = 1$. If the value of R is close to one then it shows a strong correlation between the variables. If the value of R is close to zero then the association is weak.

3.6.1. Reliability

Patton (2001) states that validity and reliability are two features that any qualitative researcher should focus on while designing a study, analyzing the results, and judging the quality of the study. Eisner (2011) further confirms this by saying a good qualitative study can help us to understand a situation that would otherwise be enigmatic or confusing; therefore good research work should have a high degree of reliability and should be valid as well. According to Alexanderson (2002) in research, all the right things must be measured. Care should be taken that the appropriate item is measured (validity). In addition, careful attention should be paid to how the measurement is being made (reliability).

The researcher used Cronbach's alpha (also called Coefficient alpha) to establish the internal consistency of the quantitative items in the questionnaire (Sections A to E). This is because the use of Cronbach's alpha enables the researcher to obtain the internal consistency from the administration of a single form of test once to gauge its reliability (Suter, 2006). "The Cronbach's alpha estimate also tells us how highly the items in our questionnaire are interrelated" (Hayes, 2008).

This study therefore takes into consideration these two key factors in the course of the research. This work as earlier mentioned adopts a conceptual analytical framework that employs theoretical and statistical comparative cross-sectional data to analyze the stated objectives. This was done because of the paucity of firm level data on the operations of M-Banking providers. To determine internal reliability Cronbach alphas was calculated to determine the internal reliability of the measures used in the survey.

Johnson and Christensen (2012) point out that coefficient alpha is versatile and can be used to test items that generate a range of responses, as well as for dichotomous items providing two choices such as true or false. They propose that "a popular rule of thumb is that the size of coefficient alpha should generally be at a minimum greater or equal to 0.70 for research purposes".

The Internal consistencies of all variables were considered acceptable as shown in Table 3.1 since they exceeded 0.70, signifying tolerable reliability. The overall reliability for the respondents was 0.814 based on Cronbach's alpha, 0.813 based on standardized items and with 125 numbers of items tested, from the eleven (11) questionnaires administered to the commercial Banks' pilot sample. Specifically, top up had 0.947, fund transfer had 0.800, bill payment had 0.775, balance enquiry had 0.738 and financial performance and market share had 0.812.

Table1. Measures of Internal Consistency

Variable	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No of Items
Top Up	0.947	0.943	7
Fund Transfer	0.800	0.768	5
Bill Payment	0.775	0.769	8
Balance Enquiry	0.738	0.772	7
Financial Performance & Market Share	0.812	0.813	8

3.6.2. Validity

Validity is the extent to which a measuring instrument measures what it claims to measure. It is whether an instrument measures the traits, characteristics, quality or whatever for which it is intended to measure (Singh, 2012). In addition, Mugenda (2008) points out that researchers “define validity as the accuracy, truthfulness and meaningfulness of inferences that are based on the data obtained from the use of a tool or a scale for each construct or variable in the study” To determine validity of the questionnaire, it was piloted with three experts before finalizing its’ administration. This was done to improve validity and cross verify the contents, structure, and nature of the questions asked. Additionally, Leedy and Ormrod (2005) recommend the use of judgement by a panel of experts to determine the validity of measuring instruments. And Mugenda (2008) maintains that a judgemental procedure of determining whether an instrument is likely to yield content valid data is to request professionals or experts in the particular field to review it and provide recommendations. The validity of the instruments was confirmed by reviewing comments and guidance of supervisors and experts. The comments of the panel of experts facilitated the revision of research questions, statement of hypotheses and restructuring of research instruments.

3.7. Ethical Considerations

The researcher took cognizance of the ethical issues relating to such a study. The researcher is aware of the need to observe and respect the unique cultural values, traditions that are held sacrosanct by the respondents in the selected companies. Therefore, the respondents to the research questions were guaranteed of privacy and confidentiality of the information that they will provide. Whenever an organization is not willing to be represented with their real name, anonymity will apply by using pseudo names. Any reference to another authors’ work was acknowledged.

The researcher reaffirmed the need to uphold ethical commitment and respect for the banks and government regulatory authorities. Hence, efforts were made to obtain permission from the telecommunication providers, government, and concerned banks before carrying out the research.

4. RESEARCH FINDINGS AND DISCUSSION

4.1. Effects of Top Ups on Financial Performance and Market Share

The first research question sought to determine the effects of M-Banking services on top ups on related to Banks financial performance and market share. The study examined aspects pertaining to how top up are an influence to the banks performance and market share.

Table2. Likert Scale Score of Top Ups On Financial Performance and Market Share

Statement	SA	A	N	D	SD	X ²	P-value
	Freq(%)	Freq(%)	Freq(%)	Freq(%)	Freq(%)		
Using mobile banking makes it easier to conduct top up transactions.	23(54.2)	18(43.0)	1(1.4)	1(1.4)		130.056	0.0001
Top ups account forms a significant portion of revenue from the M-banking platform	16(37.34)	13(28.9)	2(3.5)	2(4.9)	11(25.3)	64.338	0.0001
Security of transactions is optimum	21(49.3)	19(44.4)	1(0.7)	2(4.9)	1(0.7)	172.085	0.0001
The service is reliable	25(57.7)	17(39.4)	1(0.7)	1(2.1)	-	136.028	0.0001
Provides comfort with virtual money	24(55.6)	18(41.5)	1(0.7)	1(2.1)	-	132.141	0.0001

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Knowledge of service	9(21.1)	22(53.5)	5(12)	5(11.3)	1(2.1)	112.577	0.0001
Conveniences in services	10(23.2)	23(53.5)	7(17.6)	2(5.6)	-	70.789	0.0001
Cost is fair	20(46.5)	19(44.4)	1(2.1)	2(5.6)	1(1.4)	153.845	0.0001
M-banking top ups are the highest source of revenue from the m-banking platform	27(62.0)	14(33.1)	1(2.8)	1(0.7)	1(1.4)	90.197	0.0001
The total amount of top up made via m-Banking exceeds the amount of top up made by any other single platform	11(26.8)	20(46.5)	5(12.7)	5(13.4)	1(0.7)	86.38	0.0001

Source: *Research Data*

The results in table 2 indicate that the respondents strongly agreed ($\chi^2 = 130, P \leq 0.001$) that Using mobile banking makes it easier to conduct top up transactions. However majority of the respondents agreed strongly ($\chi^2 = 64.3, P \leq 0.001$) that Top ups account forms a significant portion of revenue from the M-banking platform. This meant that most of the commercial bank prefer M-Banking since it represents a sizeable portion of revenue to them. The findings also show that 93.7% of the respondents agree strongly ($\chi^2 = 172, P \leq 0.001$) that Security of transactions is optimum. The service is reliable (97.1%) was the response rate showing most of the banks incorporated security features to their services to protect and safeguard the M-banking applications ($\chi^2 = 136, P \leq 0.001$). The findings also show that respondents agreed ($\chi^2 = 132, P \leq 0.001$) that M-banking Provides comfort with virtual money. This indicates that virtual money has an influence on top up while using the m-banking services. In consideration of the above outcomes, there is high likelihood that physical environments spur employees' performance.

The respondents agreed ($\chi^2 = 112, P \leq 0.001$) that they are conversant and Knowledgeable with the M-Banking service while other respondents agreed ($\chi^2 = 70, P \leq 0.001$) that the Conveniences afforded by M-banking to be key to performance. On Cost being fair, the respondents had an agreed ($\chi^2 = 153, P \leq 0.001$). The findings also show that respondents agreed ($\chi^2 = 90, P \leq 0.001$) that M-banking top ups are the highest source of revenue from the m-banking platform while on the aspect of The total amount of top up made via m-Banking exceeds the amount of top up made by any other single platform, the respondents agreed ($\chi^2 = 86, P \leq 0.001$). In consideration of the above outcomes, there is high likelihood that top up aspects help boost bank' performance and market shares in commercial banks.

4.2. Effects of Funds Transfer on Financial Performance and Market Share

The second research question sought to find out how fund transfer influences performance and market share in commercial banks. The study brings to light the fact that Fund transfer via M-Banking platforms accounts for a significant portion of the banks outflow, the number of internal fund transfer via making platform constitute a large portion of funds transfer service in the bank and Fund transfers has expanded the income generating potential of the bank are an important aspect to the financial performance and market share of commercial bank.

Table3. *Likert Scale Score of Funds transfer on Financial Performance and Market Share*

Statement	SA	A	U	D	SD	X ²	P-value
	Freq(%)	Freq(%)	Freq(%)	Freq(%)	Freq(%)		
Fund transfer via M-Banking platforms account for a significant portion of the banks outflow	3(7.5)	16(37.7)	3(9.4)	10(24.5)	8(20.8)	15.962	.003
Fund transfer via M-banking exceed the amount of over the counter deposit	4(11.3)	18(43.4)	3(7.5)	10(24.5)	5(13.2)	22.377	.000

Fund transfers has had a positive effect of increasing commission fee based income	5(13.2)	18(41.5)	3(7.5)	8(20.8)	6(15.1)	18.577	.000
Fund transfers has influenced positively the increase of interest based income	9(17)	18(41.5)	-	12(28.3)	4(11.3)	11.538	.000
Fund transfers has expanded the income generating potential of the bank	8(20.8)	18(43.4)	1(3.8)	8(20.8)	4(11.3)	23.509	.000
External fund transfer via Mbanking constitute a large portion of fund transfer services in the bank	6(15.1)	21(49.1)	2(5.7)	7(18.9)	4(11.3)	30.491	.000
The number of internal fund transfer via making platform constitute a large portion of funds transfer service in the bank	25(57.7)	17(39.4)	1(0.7)	1(2.1)	-	25(57.7)	0.000

The results in table 3 indicate that the respondents agreed ($\chi^2 =15, P\leq 0.001$) that Fund transfer via M-Banking platforms account for a significant portion of the banks outflow is an important aspect. Majority of the respondents also agreed ($\chi^2 =22, P\leq 0.001$) that Fund transfer via Mbanking exceed the amount of over the counter deposit is also an important aspect. The findings also show that respondents agreed ($\chi^2 =18, P\leq 0.001$) that Fund transfers has had a positive effect of increasing commission fee based income. The findings also show that respondents agreed ($\chi^2 =11, P\leq 0.001$) that F Fund transfers has influenced positively the increase of interest based income. The respondents also agreed that ($\chi^2 =23, P\leq 0.001$) that Fund transfers has expanded the income generating potential of the bank. on External fund transfer via Mbanking constitute a large portion of fund transfer services in the bank the respondents agreed ($\chi^2 =30, P\leq 0.001$) while on The number of internal fund transfer via making platform constitute a large portion of funds transfer service in the bank they responded strongly ($\chi^2 =49, P\leq 0.001$). In consideration of the above outcomes, there is high likelihood that fund transfer aspects help boost bank' performance and market shares in commercial banks.

4.3. Effects of Bill Payments on Financial Performance and Market Share

The third research question sought to find out how bill payment influences financial performance and market share in commercial banks. The study brings to light the Use of bill payments via Mbanking is affected by the fact that it is easy to use, Use of bill payment via Mbanking is affected by the fact that it allows for trailing of business transactions/processes, Use of bill payment via Mbanking is affected by the fact that it is compatible with existing business processes and Use of bill payment via Mbanking is affected by the fact that it has observable results in the business operations.

Table4. Likert Scale Score of Bill payments on Financial Performance and Market Share

Statement	SA	A	U	D	SD	X ²	P-value
Use of bill payments via Mbanking is affected by the fact that it is easy to use	17(39.6)	23(54.7)	1(1.9)	1(1.9)	-	46.769	.000
Use of bill payment via Mbanking is affected by the fact that it allows for trailing of business transactions/processes	6(15.1)	22(50.9)	1(3.8)	11(26.4)	1(1.9)	43.577	.000
Use of bill payment via Mbanking is affected by the fact that it is compatible with existing business processes	4(11.3)	16(37.7)	5(13.2)	13(30.2)	-	11.490	.000
Use of bill payment via Mbanking is affected by the fact	3(7.5)	13(30.2)	4(9.4)	15(34)	9(17)	15.500	.000

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that it can be trusted in terms of security							
Debit & credit cards influence reduction of operational costs and hence better return on assets for the bank	18(43.4)	17(39.6)	2(5.7)	4(11.3)	-	23.604	.000
Debit & credit cards investments have payback period of less than 3 years and hence good return on assets	10(24.5)	14(34)	5(9.4)	10(24.5)	4(7.5)	13.321	.000
Incomes from debit & credit cards have had positive impact on bank income margins	7(17)	19(35.8)	5(9.4)	13(24.5)	7(13.2)	11.623	.000
Use of bill payment via Mbanking is affected by the fact that it has observable results in the business operations	4(11.3)	17(39.6)	5(9.4)	13(30.2)	2(5.7)	24.196	.000

The results in table 4. indicate that the respondents agreed ($\chi^2 = 49, P \leq 0.001$) that use of bill payments via Mbanking is affected by the fact that it is easy to use while use of bill payment via Mbanking is affected by the fact that it allows for trailing of business transactions/processes ($\chi^2 = 43, P \leq 0.001$). On use of bill payment via Mbanking is affected by the fact that it is compatible with existing business processes the respondents agreed ($\chi^2 = 11, P \leq 0.001$). The findings also established that Use of bill payment via Mbanking is affected by the fact that it can be trusted in terms of security ($\chi^2 = 15, P \leq 0.001$). Debit & credit cards influence reduction of operational costs and hence better return on assets for the bank was agreed at ($\chi^2 = 23, P \leq 0.001$) while Debit & credit cards investments have payback period of less than 3 years and hence good return on assets ($\chi^2 = 13, P \leq 0.001$). The study found out that Incomes from debit & credit cards have had positive impact on bank income margins ($\chi^2 = 11, P \leq 0.001$) and Use of bill payment via Mbanking is affected by the fact that it has observable results in the business operations ($\chi^2 = 24, P \leq 0.001$). In consideration of the above outcomes, there is high likelihood that bill payments by customers help boost bank' performance and market shares in commercial banks.

4.4. Balance Enquiry on Financial Performance and Market Share

In the fourth research question, the study sought to establish whether balance enquiry had any effect on Financial Performance and Market Share. To determine the banks' Financial Performance and Market Share in relation to the balance enquiry, they were asked to rate various aspects of the statements as results displayed

Table5. Likert Scale Score of Balance enquiry on Financial Performance and Market Share

Statement	SA	A	U	D	SD	X ²	P-value
It is easy for the banks customers to make balance enquiries	6(11.3)	28(52.8)	3(5.7)	13(24.5)	2(3.8)	44.346	.000
The presence of balance enquiries is responsible for the enormous acceptance of the service	6(11.3)	26(49.1)	6(11.3)	10(18.9)	4(7.5)	31.077	.000
Balance enquiries transactions via Mbanking exceed the over the counter balance enquiries transaction from any other single platform	7(13.2)	23(43.4)	5(9.4)	13(24.5)	4(9.4)	22.189	.000
Can be trusted in terms of security	10(18.9)	24(45.3)	5(9.4)	12(22.6)	2(3.8)	27.094	.000
The service is reliable	6(11.3)	31(58.5)	4(7.5)	10(18.9)	2(3.8)	52.377	.000
Is compatible with existing business processes	9(17)	28(52.8)	3(5.7)	11(20.8)	2(3.8)	41.245	.000

Allows for trailing of balance transactions /process	10(18.9)	15(28.3)	2(3.8)	21(39.6)	5(9.4)	22.000	.000
Ease of use	9(17)	18(41.5)	-	12(28.3)	4(11.3)	43.566	.001
Balance enquiry via M-Banking platforms account for a significant portion of the banks outflow	8(20.8)	18(43.4)	1(3.8)	8(20.8)	4(11.3)	64.232	.001

The results in table 5 indicate that the respondents agreed ($\chi^2 =44, P\leq 0.001$) that It is easy for the banks customers to make balance enquiries. The respondents agreed ($\chi^2 =31, P\leq 0.001$) that the presence of balance enquiries is responsible for the enormous acceptance of the service. The findings also show that the respondents agree strongly ($\chi^2 =22, P\leq 0.001$) that Balance enquiries transactions via Mbanking exceed the over the counter balance enquiries transaction from any other single platform. On issues of being trusted in terms of securitythe respondents agreed($\chi^2 =27, P\leq 0.001$). On The service is reliable they agree ($\chi^2 =52, P\leq 0.001$) while on compatible with existing business processes($\chi^2 =41, P\leq 0.001$). Allows for trailing of balance transactions /process ($\chi^2 =22, P\leq 0.001$). Ease of use($\chi^2 =41, P\leq 0.001$) while Balance enquiry via M-Banking platforms account for a significant portion of the banks outflow ($\chi^2 =64, P\leq 0.001$).

4.5. Correlation Analysis

Correlation coefficients measure the strength of association between dependent and independent variable(s) in order to get an answer to the research questions.

Table6. Summary of Correlation

		Top up	Fund transfer	Bill payment	Balance enquiry	Financial performance and market share
Top up	Pearson Correlation	1				
	Sig. (2-tailed)	.000				
	N	44				
Fund transfer	Pearson Correlation	.655	1			
	Sig. (2-tailed)	.000	.001			
	N	44	44			
Bill payment	Pearson Correlation	.633	.591	1		
	Sig. (2-tailed)	.000	.000			
	N	44	44	44		
Balance enquiry	Pearson Correlation	.540	.585	.498	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	44	44	44	44	
Financial performance and market share	Pearson Correlation	.577	.653	.631	.503	1
	Sig. (2-tailed)	.000	.001	.000	.001	
	N	44	44	44	44	44

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

A correlation analysis to determine whether top up had an influence on Financial performance and market share in Commercial Banks shows a relationship exist($r=0.577, \alpha = 0.00$). This suggests that topping up was convenient to the customers thus important in improving financial performance and market share in commercial banks.

The correlation analysis to determine whether fund transfer had an influence on Financial performance and market share in Commercial Banks shows a relationship exist($r = 0.6532 \alpha = 0.01$). This implies that transferring funds was significant to financial performance and market share in commercial banks.

The study also sought to determine whether bill payment had an influence on Financial performance and market share on Commercial Banks shows a relationship exist ($r = 0.631 \alpha =0.00$). The relationship is high suggesting bill payment being a significant factor in financial performance and market share in commercial banks.

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Finally the correlation analysis to determine whether balance enquiry had an influence on Financial performance and market share on Commercial Banks shows a relationship exist($r = 0.503 \alpha = 0.01$). This shows that balance enquiries had a significant influence on financial performance and market share in commercial banks.

In summary, fund transfer had the highest association with financial performance and market share in commercial banks followed by bill payments, top up and the least association in the study was balance enquiry. It can therefore be concluded that all the variables were significant to the study problem although their degrees of influence varied.

4.5.1. Regression Analysis

Table7. Multiple Linear Regression Analysis Model Summary (Financial Performance)

Model	R	R Squared	Adjusted R Square	Std of Error Estimate
1	0.819	0.671	0.626	0.32561

a. Predictors: (Constant), Top Ups, Fund Transfer, Bill Payment, Balance Enquiry

b. Dependent Variable: Financial Performance

Table8. Multiple Linear Regression Analysis Model Summaries (Market Share)

Model	R	R Squared	Adjusted R Square	Std of Error Estimate
1	0.675	0.455	0.390	0.7809

a. Predictors: (Constant), Top Ups, Fund Transfer, Bill Payment, Balance Enquiry

b. Dependent Variable: Market share

Table9. Anova

Model	Sum of squares	Degree of freedom	Mean square	f	sig
1	Regression	2	.202	8.66	.004a
	Residual	3	.246		
	Total	5			

a. Predictors: (Constant), Top Ups, Fund Transfer, Bill Payment, Balance Enquiry

b. Dependent Variable: Financial Performance

Table10. Coefficient of Determination of M-Banking Services on Financial Performance and market share

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.4432	.826		5.37	.009		
	Top Ups	0.674	.238	.218	.253	.000	.0702	1.425
	Funds Transfer	.778	.313	.359	.213	.005	.0950	1.052
	Bill Payments	.725	.298	.146	.266	.000	.0551	1.815
	Balance Enquiry	.524	.218	.044	.304	.000	.0569	1.759

a. Predictors: (Constant), Top Ups, Fund Transfer, Bill Payment, Balance Enquiry

b. Dependent Variable: Financial Performance and market share

Dependent Variable: Financial performance and market share

The regression equation, $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \alpha$ become:

$$Y = 0.4432 + 0.674X_1 + 0.778X_2 + 0.725X_3 + 0.524X_4$$

Where Y was the dependent variable (Financial performance)

X1 is the top up variable

X2 is the fund transfer variable,

X3 is bill payment variable, and

X4 is balance enquiry.

According to the regression equation established, taking all factors into consideration (Top Ups, Fund Transfer, Bill Payment, Balance Enquiry) constant at zero, the effect of debt financing on profitability was .4432.

The regression results were used to test the study hypothesis as follows: The first hypothesis H01. There is no significant relationship between mobile top up and financial performance and market share of listed banks in Kenya. The study findings showed that there is a significant positive relationship between mobile phone banking and commercial banks performance ($\beta=0.674$ and P Value < 0.05). Therefore, a unit increase in mobile phone banking leads to an increase in commercial bank financial performance by 0.674.

The second hypothesis stated that there is no significant relationship between mobile fund transfer and financial performance and market share of listed banks in Kenya. Results of the study showed that there is a positive significant positive relationship between mobile fund transfer and commercial banks financial performance ($\beta=0.778$ and P value < 0.05). Therefore, a unit increases in mobile fund transfer and financial performance of commercial banks in Kenya by 0.778.

The third hypothesis hypothesized that there is no significant relationship between bill payment and financial performance of commercial banks in Kenya. Results of the study showed that there is a positive significant positive relationship between bill payment and commercial banks financial performance ($\beta=0.725$ and P value < 0.05). Therefore, a unit increases in bill payment and financial performance of commercial banks in Kenya by 0.725

The fourth hypothesis hypothesized that there is relationship between balance enquiry and financial performance of commercial banks in Kenya. Results of the study showed that there is a positive significant positive relationship between balance enquiry and commercial banks financial performance ($\beta=0.529$ and P value < 0.05). Therefore, a unit increases in balance enquiry and financial performance of commercial banks in Kenya by 0.529.

From the regression equation established, taking into consideration all the factors (Top Ups, Fund Transfer, Bill Payment, Balance Enquiry) constant at zero, the banks financial performance would be 0.826.

4.6. Summary of the Test of Hypothesis

These results imply that fund transfer contributes the most m-Banking service money use followed by bill payments, top ups, while balance enquiry contributes the least to m-Banking money.

H₀₁ indicated that there is no significant relationship between mobile top up and financial performance and market share of listed banks in Kenya. Table 4.12 indicated that top up had a β value of 0.218 with a p-value of 0.000 thus the study rejected hypothesis one and concluded that top up positively affected the financial performance and market share of listed banks in Kenya.

H₀₂ indicated that there is no significant relationship between mobile fund transfer and financial performance and market share of listed banks in Kenya. Table 4.12 indicated that fund transfer had a β value of 0.359 with a p-value of 0.005 thus the study rejected hypothesis one and concluded that fund transfer positively affected financial performance and market share of listed banks in Kenya.

H₀₃ indicated that there is no significant relationship between mobile bills payment and financial performance and market share of listed banks in Kenya. Table 4.12 indicated that bill payment had a β value of 0.146 with a p-value of 0.000 thus the study rejected hypothesis one and concluded that bill payment positively affected the financial performance and market share of listed banks in Kenya.

H₀₄ indicated that there is no significant relationship between mobile balance enquiry and financial performance and market share of listed banks in Kenya. Table 4.12 indicated that balance enquiries had a β value of 0.044 with a p-value of 0.000 thus the study rejected hypothesis one and concluded that balance enquiries positively affected the financial performance and market share of listed banks in Kenya.

5. CONCLUSION

In general, the research thoroughly examined the impact of M-banking particularly selecting services offered such as top up, fund transfer, bill payments and balance enquiry financial performance and market share of the commercial banks. Entirely the results collectively applaud the hypotheses. The study concludes that mobile banking has gained acceptance in Kenya and that its utilization by majority of Kenyans has brought returns to the banking industry.

5.1. The Effect of Mobile Top Up on Financial Performance and Market Share of Listed Banks in Kenya

The study concludes that there was a strong positive relationship between top up and financial performance of commercial banks. Mobile phone banking has helped the commercial banks to improve top up features, through technology mobile phone banking has created greater opportunities to the banks to offer great flexibility to the customers, this has enabled commercial banks to be very fast in adopting mobile banking which has enabled commercial bank to be ubiquity in coverage, interactivity, and with greater accessibility compared to conventional banking channels such as Automated Teller Machine (ATM), and non-mobile banking which influence the financial performance of the bank. Mobile phone banking service provides convenience and promptness to customers along with cost savings, banks are also interested in expanding their market through mobile services.

5.2. Effects of Funds Transfer on Financial Performance and Market Share

Given the actual findings leaves the issue of provision of maximum deposit rates being varied needs to be properly streamlined and guided so as to facilitate those moving with large amounts of cash for business to have a bigger threshold for Mobile money account transaction purposes. In actual fact Mobile banking poses a brighter future where moving with hard cash will be at minimal. Mobile banking can be synonymous to common visa cards.

5.3. Effects of Bill Payments on Financial Performance and Market Share

To sum up the m-banking fuelled the Commercial Banks of Kenya a great deal of cash capital flow that increase the profitability as well as ROA of the banks. It is very clear that m-banking is promising activity to increase the performance of Commercial Banks.

5.4. Balance Enquiry on Financial Performance and Market Share

Based on the findings of the study, it can be concluded that M-banking influence financial performance and market share of commercial banks in Kenya positively. Rachael, (2010) in her research on effects of mobile banking on profitability of commercial banks in Kenya concluded that mobile banking to a larger extent impacts the financial performance of commercial banks in Kenya in that it helps reduce unnecessary costs, increases efficiency and improves on service delivery.

The adoption of M-banking by commercial banks has a high potential of improving financial performance and market share hence better returns to the shareholders.

REFERENCES

- Agarwal, R., & Prasad, J. (1997). The role of innovation characteristics and perceived voluntariness in the acceptance of information technologies. *Decision Science*, 28(3), 557-582.
- Allan, C., Annear, J., Beck, E., Beneren, J.V. (2003), "A framework for the adoption of ICT and security technologies by SMEs", *Proceedings of 16th Annual Conference of Small Enterprise Association of Australia and New Zealand*, pp.1-10
- Anderson, K.J. (2010). Adoption of web site and e-commerce technology among Malaysian public companies. *Industrial Management & Data Systems* 105 (9), 1172-87.
- Avira, M.T. (2007). Perceived benefits of e-commerce adoption in the electronic manufacturing companies in Malaysia. *Journal of Social Sciences, Banking; The International Journal of Bank Marketing* 28 (5), 328-341.
- Beck, R., Wigand, R.T., Koenig, W. (2003), "Beyond the electronic commerce diffusion race: efficiency prevails", *Proceedings of the 11th European Conference on Information Systems (ECIS) on ICT Standardization, Sheraton Seattle, WA, USA*, pp.1-13
- Beins, B., (2009). *Research Methods: A tool for life* (2nd ed.). Boston, MA: Pearson.
- Blesa, A., & Ripoll, M. (2003). The Role of Market Orientation in the Relationship between Entrepreneurial Proactiveness and Performance. *Journal of Entrepreneurship*, 1-19.
- Booz Allen. (2003). "Processing Cost per Transaction." New York: Booz Allen.
- Bryman A. (2012). *Social research methods (4th ed.)*. Oxford, UK: Oxford University Press.

- Buonanno, G., Faverio, P., Pigni, F., Ravarini, A., Sciuto, D., Tagliavani, M. (2003), "Factors affecting ERP system adoption: a comparative analysis between SMEs and large companies", *Journal of Enterprise Information Management*, Vol. 18 No.4, pp.384-426.
- Burns, H., (2002). Bank Performance in Transition Economies, Wiliam Davidson working paper Number 505, September 2002
- Celent, N. (2007). Government promotion and facilitation of ICT use by SMEs: APEC and New Zealand", *Asia Small Business Review*.
- Cellular online (2009). Beyond the electronic commerce diffusion race: efficiency prevails. Proceedings of the 11th European Conference on Information Systems (ECIS) on ICT Standardization, Sheraton Seattle.
- Chong, S., Pervan, G., Bauer, C. (2001), "Implementation success of Mobile phone-based electronic commerce for small-and-medium-sized enterprises in Australia", *Proceedings of the 14th International Bled Electronic Commerce Conference, Bled, Slovenia*
- Cracknell, D. (2004). Electronic banking for the poor—panacea, potential and pitfalls *Small Enterprise Development*, 15(4), 8-24.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16, 297-334.
- Eisner, E. W. (2011). *The enlightened eye: Qualitative inquiry and the enhancement of educational practice*. New York, NY: Macmillan Publishing Company.
- Gall, M. D. (1996) *Educational Research: An Introduction*. New York: Longman.
- Ghuri, P. and Gronhaug, K. (2005) *Research Methods in Business Studies: A Practical Guide*, New York: Financial Times Prentice Hall.
- Hayes, S. C., Strosahl, K. D., Wilson, K. G., Bissett, R. T., Pistorello, J., Toarmino, D., et al. (2008). Measuring experiential avoidance: a preliminary test of a working model. *Psychological Record*, 54, 553–578
- Higgins, D., Kendall, J., & Lyon, B. (2012) Mobile Money Usage Patterns of Kenyan Small and Medium Enterprises. *Innovations: Technology, Governance, Globalization, Spring*. 7 (2), 67-81.
- infoDEV. (2006). Micro-payment systems and their application to mobile networks. [http:// infodev.org/ files/3014_file_infoDev.Report_m_Commerce_January.2006.pdf](http://infodev.org/files/3014_file_infoDev.Report_m_Commerce_January.2006.pdf)
- Ivatury , B & Mas, H (2008) *Teleuse@BOP3: A Qualitative Study*, LIRNEasia, Colombo
- Kothari, C.R. (2004). *Research Methodology, methods and techniques* (2nd ed.). India, Jaipur: 47 New Age International limited publishers
- Leedy, D. P., &Ormrod, E. J. (2005). *Practical Research Planning and Designing* (8th Ed.).New Jersey: Pearson Merrill Prentice Hall.
- Mugenda, A. G. (2008). *Social Science Research: Theory and Principles*. Nairobi: Arts Press, Applied Research and Training Services
- Norusis, (2008). *Organizational Theory, Design, and Change*.(6thEdition). New Jersey: Prentice Hall.
- OECD. (2013). *The Internet Economy on the Rise Progress since the Seoul Declaration: Progress since the Seoul Declaration*. Paris: OECD.
- Porteous, D. (2006). The Enabling Environment for Mobile Banking in Africa, London: DFID. <http://www.bankablefrontier.com/assets/ee.mobil.banking.report.v3.1.pdf>
- Sekaran, U. (2003), *Research Methods for Business: A Skill Building Approach*, Wiley, New York, NY, .
- Somekh, B., &Lewin, C. (2005). *Research Methods in the Social Sciences: A Guide for Students and Researchers*: Sage.
- Sprinthall, D. (1997). Implementing advanced manufacturing technology: factors critical to success, *Logistics Information Management*, Vol. 5 No. 1, pp. 39-46
- Suter., T (2006) A Comparative Discussion of the Notion of Validity in Qualitative and Quantitative Research. *The Qualitative Report*, 4(3&4).

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A proactive and inspirational professional who consistently achieves and exceeds on business objectives. Dynamic and focused as a team player and equipped by experience and training to deliver high performance in demanding work environments.