

# EFFECT OF FINANCIAL INNOVATION ON FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN MOMBASA COUNTY, KENYA

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**Abstract:** The general objective of this study was to establish the effects of financial innovation on financial performance of commercial banks in Mombasa County, Kenya. The specific objectives of the study were; to determine the effect of internet banking innovation on financial performance of commercial banks in Mombasa County, Kenya, to explore the effect of agency banking innovation on financial performance of commercial banks in Mombasa County, Kenya, to assess the effect of ATM Banking innovation on financial performance of commercial banks in Mombasa County, Kenya and to establish the effect of mobile banking innovation on financial performance of commercial banks in Mombasa County, Kenya. The theoretical framework of the study consisted of Diffusion of Innovations Theory, Unified Theory of Acceptance and Use of Technology (UTAUT), Bank-Led Theory and Financial Intermediation Theory. This research adopted a cross-sectional survey research design aimed at collecting large number of qualitative and quantitative data at a point in time to address the formulated hypotheses. Stratified sampling technique was used to select sample size of 153 respondents from the target population of 248 respondents in commercial banks in Mombasa County, Kenya. Primary data was collected by use of self-administered structured questionnaires which was distributed through the drop and pick method. The secondary data collected was used to cross validate the primary data results. The collected data was analyzed quantitatively and qualitatively. Descriptive and inferential statistics was done using Statistical Package for Social Sciences (SPSS) version 24 and specifically multiple regression model was used for hypotheses testing. Set of data was described using percentage, mean standard deviation and coefficient of variation and presented using tables, charts and graphs. The study revealed that financial innovations had a statistically significant effect on financial performance of commercial banks in Mombasa County. Internet Banking Innovation had a statistically significant effect on financial performance of commercial banks in Mombasa County. Agency Banking Innovation had a statistically significant effect on financial performance of commercial banks in Mombasa County. ATM Banking Innovation had a statistically significant effect financial performance of commercial banks in Mombasa County. Mobile Banking Innovation had a statistically significant effect on financial performance of commercial banks in Mombasa County. The study recommended that managers in commercial banks should adopt financial innovations so as to boost their financial performance.

**Keywords:** financial innovation, financial performance, commercial banks.

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## 1. INTRODUCTION

### Background of the Study:

Financial innovation is the act of creating and then popularizing new financial instruments as well as new financial technologies, institutions, and markets. Mendoza (2015) indicated that financial innovation can be broadly defined as creating new financial instruments, technologies, institutions, and markets. This includes institutional (new types of financial firms), product (new types of derivatives or securitized assets, among others) and process (online banking, phone banking, and other forms of information and communication technology applications) innovations. The application of ICT

has also revolutionized the business model of the financial industry, improved client access to various forms of financial services (via the internet, personal computers, and mobile telephones), and allowed for the creation of new products and new institutions that can offer financial services (digital platforms, information technology companies, and operators of mobile telephony) (Roberts & Amit, 2013).

Gros (2017) posited that the revolution in the market place has set in motion a revolution in the banking sector for the provision of a payment system that is compatible with the demands of the electronic marketplace. From the Economist's report (2017), among the factors that stimulate financial innovation, it is important to mention in addition to technical and technological changes regulatory changes, changes in market conditions (changes in the demand for financial services and in actual and potential competition), and changes in economic policy. The latter may lead, among others, to changes in the inflation rate and exchange rate regime, or may create market demand for new types of products. The Economist (2017) further posits that the developments in the financial sector have not only led to the increase in the number of financial institutions, but also the development in level of sophistication with new payment systems and asset alternatives to holding money. Financial innovation has the potential to revolutionize the financial industry more so than what has already happened to a great extent. Today, banks and non-banking financial institutions operate in a very different way than they did 20 or 30 years ago (Hussein & Nyaoga, 2017). Hornuf and Schwienbacher (2017) argued that an increasing number of clients do not need to physically visit a bank office (or the office of another type of financial institution) to deposit money, receive a loan, make a payment or transfer, or buy insurance or other financial products.

Tooker and Maurer (2016) observed that associated with the rapid expansion in the banking sector is a range of financial innovations including the ATMs and debit cards introduced in the late 1990s; the electronic money introduced in early 2007; Value capping in 2009; the agent banking model introduced in mid-2010; Cheque Truncation System (CTS) in 2012 and more recently T+1 (cheques clearing in one day) in 2013 (Central Bank of Kenya - CBK report, 2013). Other innovations in banking and financial sector are RTGS, EFT, Retail Banking, free advisory services, implementation of standing instructions of customers, payments of utility bills, fund transfers, internet banking, telephone banking, mobile banking, selling insurance products, issue of free cheque books, travelers cheques and many more value-added services (CBK, 2013).

#### **Statement of the Problem:**

EY (2018) in Global Banking Outlook projects that in Sub-Saharan Africa only 5% - 25% percent of households have a formal relationship with a financial institution. Cytonn (2018) posits that to optimize services and minimize costs, Kenyan banks are frequently migrating towards a 24hr 7 days service and customers are enjoying the greater sense of freedom that this creates. Financial innovations like the ATM banking, mobile banking, agency banking and internet banking have enabled banks to reach a wide consumer base across geographies with little effort (World Fintech Report, 2018). These innovations are providing alternative delivery channels for the delivery of financial services in Kenyan banks. Deloitte (2018) argues that technologies such as ATMs, mobile phones and points-of-sale (POS) devices are increasingly being used to reduce costs and increase access for low-income clients.

Fintech (2018) found that perceived financial cost, perceived risk and subjective norm are the most influencing factors that affect people's behavioral intention to adopt (or continue to use) mobile banking. Aduda and Kingoo (2012) in a study on the relationship between electronic banking and financial performance of commercial banks in Kenya and found out that there exists a strong positive relationship between electronic banking and bank performance in respect to return on assets. Cracknell (2012) in his study of policy innovations and their impact on financial access in Kenya notes that Equity Bank has demonstrated both in Kenya and beyond, the power of matching market responsive processes with technology, systems and word of mouth. Financial innovations are integral in realization of the economic pillar of Kenya's vision 2030 through providing the boost necessary for financial institutions to circumvent market imperfections.

From the foregoing, it is evident that financial innovations have been widely studied and their effects on performance documented from various contexts. Over the years there has been a dramatic rise in customer numbers and value of transactions carried out by the new service. In Mombasa County consumer acceptance and use of financial innovations is still limited (Karin, 2002). In addition, there is limited understanding of effects of financial innovation on financial performance of commercial banks in Mombasa County. In addition, one of the most publicized disruptive challenges facing financial innovations is the challenges posed to financial services by modern technology, hence the research gap. It was against this backdrop that the study sought to establish the effects of financial innovation on financial performance of commercial banks in Mombasa County, Kenya.

**Research Objectives:**

This study was guided by both general and specific objectives

**General Objective:**

The general objective of this study was to establish the effects of financial innovation on financial performance of commercial banks in Mombasa County, Kenya.

**Specific Objectives:**

The specific objectives of the study were:

- 1) To determine the effect of internet banking innovation on financial performance of commercial banks in Mombasa County, Kenya
- 2) To explore the effect of agency banking innovation on financial performance of commercial banks in Mombasa County, Kenya
- 3) To assess the effect of ATM Banking innovation on financial performance of commercial banks in Mombasa County, Kenya
- 4) To establish the effect of mobile banking innovation on financial performance of commercial banks in Mombasa County, Kenya

**Research Hypothesis:**

- 1) **H<sub>01</sub>**: Internet banking innovation has no statistically significant effect on financial performance of commercial banks in Mombasa County, Kenya.
- 2) **H<sub>02</sub>**: Agency banking innovation has no statistically significant effect on financial performance of commercial banks in Mombasa County, Kenya.
- 3) **H<sub>03</sub>**: ATM banking innovation has no statistically significant effect on financial performance of commercial banks in Mombasa County, Kenya.
- 4) **H<sub>04</sub>**: Mobile banking innovation has no statistically significant effect on financial performance of commercial banks in Mombasa County, Kenya.

## 2. LITERATURE REVIEW

**Theoretical Framework:**
**Diffusion of Innovations Theory:**

Diffusion of Innovation (DOI) Theory was developed by E.M. Rogers in 1962 (Chung & Kwon, 2009). It originated in communication to explain how, over time, an idea or product gains momentum and diffuses (or spreads) through a specific population or social system. The theory states that people who adopt an innovation early have distinctive characteristics than people who adopt an innovation later. When promoting an innovation to a target population, it is important to understand the characteristics of the target population that will help or hinder adoption of the innovation. There are five established categories of adopters, and while most of the general population tends to fall in the middle categories, it is still necessary to understand the characteristics of the target population. When promoting an innovation, there are different strategies used to appeal to the different adopter categories.

Chung and Kwon (2009) argue that innovators are people who want to be the first to try the innovation. They are venturesome and interested in innovative ideas. These people are very willing to take risks, and are often the first to develop innovative ideas. Very little, if anything, needs to be done to appeal to this population. Liang and Lu (2010) pointed that early adopters are people who represent opinion leaders. They enjoy leadership roles, and embrace change opportunities. They are already aware of the need to change and so are very comfortable adopting innovative ideas. Strategies to appeal to this population include how-to manuals and information sheets on implementation. They do not need information to convince them to change. Further, early majority are rarely leaders, but they do adopt innovative

ideas before the average person. That said, they typically need to see evidence that the innovation works before they are willing to adopt it. Strategies to appeal to this population include success stories and evidence of the innovation's effectiveness.

Late majority are skeptical of change, and will only adopt an innovation after it has been tried by the majority. Strategies to appeal to this population include information on how many other people have tried the innovation and have adopted it successfully. Finally, laggards are bound by tradition and very conservative. They are very skeptical of change and are the hardest group to bring on board. Strategies to appeal to this population include statistics, fear appeals, and pressure from people in the other adopter groups (Waheed *et al.*, 2015). This theory supports the general objective which seeks to establish the effects of financial innovation on financial performance of commercial banks.

#### **Unified Theory of Acceptance and Use of Technology (UTAUT):**

Unified Theory of Acceptance and Use of Technology (UTAUT) was developed by Venkatesh *et al.* (2003) through reviewing eight models which explain ICT usage, namely; Theory of Planned Behaviour (TPB), Diffusion of Innovations (DOI), Theory of Reasoned Actions (TRA), Technology Acceptance Model (TAM), the motivational model, a model combining TAM and TPB, the model of PC utilization, DOI, and the social cognitive theory. It was proposed and validated in order to provide a unified theoretical basis from which to facilitate research on information system (IS)/ information technology (IT) adoption and diffusion. The theory postulates that four core constructs – performance expectancy, effort expectancy, social influence, and facilitating conditions –are direct determinants of IS/IT behavioural intention and ultimately behaviour (Liang & Lu, 2010).

San-Jose, Ituralde and Maseda (2009) indicated that the UTAUT model aims to explain a user's intentions to use ICT and the subsequent user behaviour. It offers the manager with using tools, which the manager can use to weigh the introduction of new technology, predict, and explain the user's behavior of accepting information technology. There are four key moderating variables: gender, age, experience, and voluntariness of use. Scholars and researchers have established that UTAUT provides the ability to assess the likelihood of success of technology introductions and to understand the drivers of acceptance to design interventions, which include, for instance training or marketing. UTAUT focuses on users who may be less willing to adopt and use new systems.

The UTAUT model has been criticized by various scholars citing its inadequacies, while others have embraced its propositions. Bagozzi (2007) critiqued the model and its subsequent extensions, citing that it presents a model with 41 independent variables for predicting intentions and at least 8 independent variables for predicting behaviour, and that it contributed to the study of technology adoption "reaching a stage of chaos. On the contrary, he proposed a unified theory which consolidated the many splinters of knowledge to explain decision making. On the other hand, Van Raaij (2008) criticized the UTAUT as being less thrifty than the previous Technology Acceptance Model and TAM2 because its high determination coefficient, which is only achieved when moderating key relationships with up to four variables. They also called the grouping and labeling of items and constructs problematic because varieties of disparate items were combined to reflect a single psychometric construct. This theory is relevant in investigating the effect of internet banking innovation on financial performance of banks.

#### **Review of Literature of Study Variables:**

The independent variables are internet banking innovation, agency banking innovation, ATM banking innovation and mobile banking innovation while the dependent variable is financial performance.

#### **Internet Banking Innovation:**

Fox (2016) defines internet banking as the use of the internet as a delivery channel for banking services, which includes all traditional services such as balance enquiry, printing statement, fund transfer to other accounts, bills payment and new banking services such as electronic bill presentment and payment without visiting a bank. Internet banking services is major information services of a bank to serve its customers via the Internet. Internet banking permits consumers to carry out usual banking transactions on a computer which is equipped with Internet connection. Among the most commonly used internet banking services include transferring funds between accounts, checking the balance in one's bank account and bill paying. Tooker and Maurer (2016) argue that the number of users around the globe will rise to a projected three

billion in 2016 from 1.9 billion in 2010. Broadening access, particularly via smart-phones and other mobile devices, and the popularity of social media are further compounding the internet's impact. In the developing world, many consumers are going straight to social. Nelms *et al.*, (2017) argues that Canada is one of the world's leaders in internet banking with 65 percent of its population being internet banking users, followed by the Netherlands (61%). The percentages of internet banking users in United Kingdom and in the United States were 52% and 45%, respectively. Typically, most developed countries have established their IT infrastructure and their Internet adoption rate is generally above 70 percent of their population (ITU, 2011). In contrast, most developing countries, such as Kenya, still have an Internet adoption rate below 40% (CBK, 2015).

Singh (2014) examined Internet technology in the South African banking industry and highlighted that Internet market potential is significant because banks can target most segments in the industry both locally and internationally. Metwally (2013) also conducted a study the assessment of Users' Acceptance of internet banking, an Empirical Case of Egypt. The results show that the main factor, which affected banks' customers' decision to use internet banking service, was ease of use, followed by usefulness and trust and credibility of the service. Other external factors such as personal innovativeness, individual differences, computer and Internet use experience, promoting circumstances and service assistance, and communication, which determined the three antecedents, were applicable and valid in explaining users' adoption. Although these studies show that internet banking is important to China, Malaysia and Egypt, it seems that there are not many studies conducted to investigate internet banking activities and user attitudes among Kenyan banks, specifically on Imperial Bank.

#### **Agency Banking Innovation:**

Celina (2012) defines agency banking as a banking service where the bank appoints an agent to offer a variety of banking services on behalf to its client. Agency banking results into deepening of the market and creates economies of scale. Agent banking has become one of the most promising strategies for offering financial services in emerging markets. In this model, financial institutions work with networks of existing nonbank retail outlets such as convenience stores, gas stations, and post offices to deliver financial services. This approach can be especially powerful when serving the unbanked poor because of its ability to reduce banks costs and reach low income workers where they live. Agency banking is a banking service where the bank appoints an agent to offer a variety of banking services on behalf to its client (Ferdous *et al.*, 2015). Agency banking results into deepening of the market and creates economies of scale. Agent banking does improve the economics for these institutions compared with branches, especially for high-transaction, low-balance accounts that are common among poor users (Khamis, 2016). Through cost-effective agency banking networks, customers can now access banking services in kiosks around the country, particularly in remote, previously unbanked territories. In the same view, Ferdous *et al.*, (2015) pointed that the biggest advantage that agency banking offers to banks is that it drastically cuts down the costs of providing services to the customers. For example, an average teller or phone transaction costs about \$2.36 each, whereas an electronic transaction costs only about \$0.10 each.

As a result of low transactional cost, banks are able to attract the unbanked and/or under banked population thus increasing their revenues (Jaldesa, Muturi & Sumba, 2015). Kenya's Equity Bank's agency model, was singled out and praised for having revolutionized banking in the developing nation (Fintech, 2018). Reaching poor clients in rural areas is often prohibitively expensive for financial institutions since transaction numbers and volumes do not cover the cost of a branch. So far in Kenya, Equity bank (Equity Mashinani) Post Bank (Benki Yangu), Co-operative bank (Coop Kwa Jirani) and Kenya commercial bank (KCB Mtaani) have launched forays into the segment. Agency banking has enabled bank customers to access the basic banking services, for example, cash deposit, cash withdrawal and bank balance inquiry conveniently or what would be termed as within the comfort of their neighbour-hood. Equity bank (Equity Mashinani) Post Bank (Benki Yangu), Co-operative bank (Coop Kwa Jirani) and Kenya commercial bank (KCB Mtaani) have launched forays into the segment (Ndungu & Wako, 2015). Recent data from central bank of Kenya reveals that the regulator has licensed over 10,000 establishments to act as agents of banks with Equity bank claiming to have outsourced some of its operations to 5,000 active outlets CBK data shows 8,809 agency outlets were opened in 2010, most of which are being operated by Equity and cooperative bank. KCB hoped to open about 2, 5000 agency branches by 2012, while post bank hoped to open 500 agency branches by 2012 (Mwangi, 2015). Lozano and Mandrile (2010) aver that agency banking has helped banks enhanced value chain and performance through economies scale and performance of the poor.

**ATM Banking Innovation:**

An ATM system is an inter-organisational system that links banks and other financial institutions to retail banking customers for several types of routine banking transactions (Mwatsika, 2014). These include inquiries, deposits, cash withdrawals, cash transfers and payments. Investment in ATM technologies remains strategic as banks continue to invest in newer and more efficient ATM technologies to bolster delivery of an efficient banking experience. It is the goal of banks to offer competitive services and keep an expanding base of satisfied customers to remain competitive and profitable. This is evident through banks' investment drive in improving and increasing delivery channels, product/service reach and customer communication. The use of ATM is a new way of accessing banking services necessitated by customers' business needs and is enabled by fast changing technology like Internet.

Due to achievements brought about by increased utilization of Information and Communication Technology (ICT) in society, the banking industry has introduced ATM. ATMs provide a new method of dispensing customer services which are expected to increase efficiency, sales performance, and enhance customer satisfaction. Mendoza (2015) argues that the advent of ATMs played a significant role in improving customer convenience and reducing costs and this led to improved efficiency and profitability in service delivery of the banks. Prior to the advent of ATMs, funds withdrawals, accounts enquiries and funds transfers between accounts required face to face interactions between bank staff and customers, a process which was slow and subject to costly human errors and large labour costs. IT developments have enabled banks to gradually replace manual work with automated processes. Gros (2017) exploratory study into the adoption of internet banking in mainland China which collected data from two public universities in Shandong Province established trust was one of the important influential factors affecting an individual intention to adopt internet banking. These findings validated prior studies that have found trust as one of the key factors in intention to adopt internet banking.

Porteous and Hazelhurst (2014) noted that even when technological advances such as the widespread use of ATMs reduced the cost of transacting, the profits were still not as good as those derived from other areas of activities. Other automated customer service innovation available in Kenya include mobile-GIS based vehicle parking management system, electronic payment systems, E-Jiji Pay, Electronic Medical Records, Watex System and intelligent transportation management systems. Using an ATM, customers can access their bank accounts to make cash withdrawals, credit card cash advances, and check their account balances as well as purchase prepaid cellphone credit. This improves convenience since customers can withdrawal money from their point of reach without necessarily visiting the bank. This increases efficiency and mitigates the costs of transactions leading to financial performance. This is consistent with Fannie Mae Foundation (2014) report that indicated that automated teller machine as used in banking sector serve approximately 420 million transactions annually for a total of \$3.3 billion in gross annual revenues.

**Mobile Banking Innovation:**

Mobile banking is a banking channel whereby the customer interacts with a bank via a mobile device, such as a mobile phone or personal digital assistant (PDA) (Barnes & Corbitt, 2013). Berger (2013) points that mobile banking or m-banking can be defined as the use of mobile devices such as mobile phones or tablets to execute banking transactions. M-banking is driven largely by the prospects of operating under minimum costs and operating increasing revenues maximization. M-banking is a cost-effective way to provide banking services to the unbanked because there is no need to set up physical branches to facilitate customers it is called as it is branchless banking. Its branchless bank model includes enhanced ability to carry out limited banking transactions via mobile phone (Tatu & Senaji, 2016). Coderias (2017) argues that connectivity for mobile device is not the part of banking service it is duly and part of business of telecommunication department and cellular service providers. Here in Kenya, mobile banking is mostly performed via short message services (SMS) or mobile internet, but changes in technology these days shows that banks have had mobile application programs developed for this specific function and they are downloaded by the clients to their mobile devices. GSM Association (GSMA, 2014) argues that the subscribers to mobile phone hit 2.5 billion mark in year 2010 and 4.0 billion in 2014. Mobile banking is most relevant in remote areas where financial institutions unreachable by customers with long distance to travel in order to get to the nearest banking institutions. Laukkanen and Lauronen (2015) observed that M-banking access amongst previously unbanked groups is believed to have a direct, positive effect on users, since it has brought about a transition from informal to formal transactions and hence alleviated poverty and caused economic development.

Bara *et al.*, (2016) indicated that the adoption of mobile phone technology in Africa has increased from 3 percent in 2002 to 72 percent in 2014. However, the positive impact of the adoption of cellular technology has not been limited to the communications or information technology sectors of developing countries. Mobile telephone money transfer services have also emerged strongly, allowing mobile phone users to make financial transactions or transfers across the country conveniently and at low cost. For Instance, M-Pesa, a pioneer mobile phone-based payment system launched by Safaricom in 2007 has experienced phenomenal growth since then. By the end of 2008, M-Pesa had over five million users, making it the largest single supplier of financial services overtaking banks that for many years were the main providers of financial services in the country. The value transferred through mobile money transfer services increased by 50.29 percent in one alone from Ksh919.22 billion in the year to June 30, 2011 to Ksh 1,375.83 billion for the year to June 30, 2012 (CBK, 2015). The adoption of mobile phones has occurred at perhaps the fastest rate and to the deepest level of any consumer level technology in history.” (Buku & Meredith, 2013) The fixed line telephone, the predecessor to mobile phones took 100 years to reach only 80 percent of the population in developed countries while mobile phones have been adopted more than five times as fast. The benefit and impact of widely available mobile phone technology has been more apparent than in Africa, where networks of both fixed line communication and physical transportation infrastructure are often inadequate, unreliable, and dilapidated.

#### **Financial Performance:**

To measure the success of an enterprise and to guide executives through the benefits realization process, an appropriate performance measurement model is needed. It is common practice to measure the performance of any business on a financial scale. Return on Investment (ROI) and Return on Assets (ROI) sales, profitability among others are the most common ways of measuring the financial success of a business (Mendoza (2015). However, in this information age, the use of financial measures only to evaluate the success of the organization can be misleading. To measure the true effects of an intervention, one needs to understand and measure all organizational impacts; not only financial impacts. Several comprehensive measurement models have been employed to measure overall organizational results (Bara and Mugano, 2016). These include: Process performance measurement model, Workflow based measurement model, Statistical control method, Self-assessment method and Balanced Scorecard method. Commercial banks have commonly adopted both quantitative and qualitative performance indicators and are especially concerned with efficiency measures largely due to the confidentiality and secrecy in the banking industry (Nzioka, 2013).

Bara and Mugano (2016) argued that the financial returns associated with investments in innovations are generally substantial. Mendoza (2015) presents a management accounting technique for measuring and improving efficiency and effectiveness in automation systems among commercial banks. He made an important distinction between effectiveness determinants (that is customer satisfaction) and effectiveness dimensions, such as timeliness and accuracy. Turner (2016), provided a formal vendor performance measurements model that used defined criteria and weighted scores to assess the performance of innovations and the model was tested and successfully implemented. In this study, the researcher has used accounting ratios to determine commercial banks' performance. The accounting ratios used included but not limited to gross profit margins; operating profit margin return on assets; return on stockholders' equity (or return on net worth); return on common equity and earnings per share (EPS). This study has used the profitability ratios to determine firm performance, because these ratios have been used by previous researchers to measure performance of organizations including Nzioka (2013) and Simiyu, & Ngugi, (2014).

### **3. RESEARCH METHODOLOGY**

#### **Research Design:**

The study used quantitative approach for the reason that the data collected using questionnaires from the respondents was analyzed easily by utilizing the standard statistical tools. Similarly, quantitative approach has techniques, measures and designs that come up with numerical and quantifiable data (Simon, 2017). The design also depends on the principles of verifiability of prove, substantiation and confirmation utilizing the correct measurement of variables being studied. Quantitative design also assumes that science seeks to determine facts with little consideration for subjective status of the individual (Patton, 2012). Christensen *et. al.*, (2011) note that quantitative design is a systematic way of collecting numerical information and analyzing it using statistical procedures. Survey method was an appropriate method for collecting data for exploratory studies for a well-defined population and it was very particular with the effect of two categories of variables.

**Target Population:**

Target population consisted of all members of a real or hypothetical set of people, events or objects from which a researcher wished to generalize the results of their research while accessible population consisted of all the individuals who realistically could be included in the sample (Sekaran & Bougie, 2011). The target population of the study was the banking sector employees in the rank of branch managers, relationship managers, digital financial services managers, agency banking managers and ATM operation managers in Mombasa County. There are 44 commercial banks in Kenya (CBK, 2016). Mombasa County hosts 71 branches of various commercial banks in Kenya as shown in appendix IV. The study targeted 248 employees of commercial banks in Mombasa County who are in the ranks stated above and as shown in table 3.1 below.

**Table 3.1: Target Population**

<b>Respondents</b>	<b>Number of Staff</b>
Branch Managers	71
Relationship Managers	39
Digital Financial Services Managers	32
Agency Banking Managers	35
ATM Operation Mangers	71
<b>Total</b>	<b>248</b>

Source: Central Bank of Kenya

**Sample Size:**

The total sample size for this study was obtained by using the formulae developed by Saunders, Thornhill, and Lewis (2012) and the adjusted sample size was 153 respondents. With a study population of 248 and a sample size of 153 respondents, the researcher applied stratified random sampling to select respondents from the five categories. Table 3.2 shows the sample size of study and distribution of questionnaires. With a confidence interval of 95 percent, the sample size was determined using the formula shown below (Saunders, Lewis, & Thornhill, 2012).

$$n = N / 1 + N (\alpha)^2$$

Where:

n= the sample size,

N= the sample frame (population)

$\alpha$ = the margin of error (0.05%).

A sample size of 153 respondents was arrived at as follows:  $n = 248/1 + 248(0.05)^2$

$$= 153 \text{ respondents}$$

This study, therefore, had a total of 153 respondents sampled for the study from a target population of 248 respondents. This sample was deemed good representation of the populations since the sample size was greater than 10 percent of the target population. Mugenda (2013) argue that for a sample to be a good representative of the population it should be at least 10 percent of the target population.

**Sampling Technique:**

After getting the sample size of 153 respondents, it is necessary to explain on how the selection number for data gathering from the target population of 248 respondents was done. This study used probability sampling since the population and location of various categories of commercial bank employees was known. Specifically, the study used stratified random sampling in order to account for the uneven distribution of various categories of commercial bank employees. This allowed the researcher to measure the effect of financial innovation on financial performance of commercial banks in Mombasa County. The uneven distribution of various categories of commercial bank employees gave rise to heterogeneity which if not properly accounted would have led to biased parameter estimates. In this regard, stratified



**International Journal of Novel Research in Humanity and Social Sciences**

 Vol. 5, Issue 5, pp: (342-360), Month: September - October 2018, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

sampling enabled us to avoid biasness consequently having unbiased parameter estimates. Based on distribution of respondents in the 5 segments (table 3.2), the researcher used proportions that were calculated in the population distribution to come up with a representative sample distribution as shown in table 3.2. The proportions calculated were given the number of respondents to be included in the sample for each segment. Thereafter simple random sampling was used to select the names of respondents in which data was collected from.

**Table 3.2: Sample Size**

Respondents	Number of Staff	Calculation	Sample Size
Branch Managers	71	$153/248*71$	44
Relationship Managers	39	$153/248*39$	24
Digital Financial Services Managers	32	$153/248*32$	20
Agency Banking Managers	35	$153/248*35$	21
ATM Operation Mangers	71	$153/248*71$	44
<b>Total</b>	<b>248</b>	<b><math>248/(1+248*0.05^2)</math></b>	<b>153</b>

**Data Collection Methods:**

The study used both primary and secondary data collection sources as follows:

**Primary Data:**

The primary data was collected through a self-administered semi-structured questionnaire using the key-informant method. Wu (2016) explains that views of key informants were widely used in marketing studies because they were deemed to be the most knowledgeable about the issues being investigated for which they were directly responsible. The structured questionnaire was with closed- ended questions and a customized five-part likert scale which was used to collect data on the independent variables from the various categories of managers. Respondents were asked to indicate agreement with each item. Each item had a five-point scale ranging from 1=strongly disagree, 2=disagree, 3=indifferent, 4=agree, and 5=strongly agree. The various respondents that were targeted were informed about the purpose of the study. The questionnaires had been preferred because personal administration of questionnaires to individuals helped to develop close relationships with the respondents. The questionnaire also provided the clarifications sought by respondents on the spot by collecting the questionnaires soon after they were filled. The data collected was edited to ensure consistency across respondents and detected omissions. Patton (2012) assert that a researcher addressed the design of the study and analysis of the results so that the research could hold quality test and this could be done through reliability. De Vaus (2012) notes that reliability is the ability of the questionnaire to give the same answer in the same circumstances from time to time. This implies that if respondents answer a questionnaire the same way on repeated situations, then the questionnaire is said to be reliable.

**Secondary Data:**

Information relating to financial performance of commercial banks in annual and published financial statements in national newspapers, during annual general meetings messages and in-house magazines was used to provide secondary data information on relevant financial performance indicators. Other important business disclosure in journals, manuals and the specific banks documents was used for secondary data collection. The secondary data collected was used to cross validate the primary data collected.

**Data Collection Procedure:**

The data collection instrument in this study was a questionnaire. The research instrument was conveyed to the respondents through the drop and pick technique. The researcher approached each category of respondent, introduced himself to the relevant respondents by explaining to them the nature and purpose of the study and then left the questionnaires with the respondents for completion and picked later within two weeks. Before the questionnaire was given out, the researcher first sought for authorization from various commercial banks in Mombasa County to collect data. A covering letter explaining the objectives of the study and assuring the respondents' confidentiality and asking them to participate in the study accompanied the questionnaire.

## International Journal of Novel Research in Humanity and Social Sciences

Vol. 5, Issue 5, pp: (342-360), Month: September - October 2018, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

Respondents were asked to willingly participate in the survey and give the data. But any respondents who declined to participate were replaced by others from the same target population. Respondents were required to fill the questionnaires that included responses on financial performance as well as the demographic information. Ghauri and Gronhaug (2015) narrate that questionnaire method was an inexpensive method for data collection. The use of questionnaire had many advantages which were as follows: they had standard questions which could be administered to a large number of respondents in Kenya within a short time and at a minimal cost. Respondents were assured of anonymity and confidentiality and they were able to complete the questionnaires when it was convenient and at their own time.

### Data Processing, Analysis and Presentation:

Qualitative as well as quantitative methods of data analysis was used to analyze the research variables. A Likert scale was adopted to provide a measure for qualitative data. The scale helped to minimize the subjectivity and make it possible to use quantitative analysis. The numbers in the scale were ordered such that they indicated the presence or absence of the characteristic to be measured Kothari and Gang, (2014). This mix of tools was necessary because whereas some aspects of the study were qualitative others were of quantitative nature.

### Qualitative Analysis:

In qualitative studies, the researcher was interested in analyzing information in a systematic way in order to come up with a useful conclusions and recommendations. In qualitative studies, researcher was interested in obtaining detailed information about the phenomena being studied, and then try to establish patterns, trends and relationships from the information gathered. Qualitative analysis aimed at providing basic information without proof of it. Before processing the responses, data preparation was done on the completed questionnaire by editing, coding, entering and cleaning the data. Data collected was analyzed using descriptive statistics. The descriptive statistical tools helped in describing the data and determining the respondents' degree of agreement with the various statements under each factor. Data analysis was done with the help of SPSS version 24.0.

### Quantitative Analysis:

Whereas qualitative analysis aimed at providing basic information, quantitative analysis went further to test the theories in the theoretical framework behind the study and prove or disapprove them. For this kind of a study, there was need to go further and test hypothesis. The multiple regression analysis was used to explore the relationship between internet banking innovation, agency banking innovation, ATM banking innovation and mobile banking innovation as the independent variable, financial performance as the dependent variable. Pearson's product moment correlation analysis was used and it's a powerful technique for exploring the relationship among variables. Correlation coefficient was used to analyze the strength of the relations between variables. Correlation coefficients was calculated to observe the strength of the association. A series of multiple regression analysis (standard and step wise) was used because they provide estimates of net effects and explanatory power. Analysis of variance (ANOVA) was used to test the significance of the model.  $R^2$  was used in this research to measure the extent of goodness of fit of the regression model. The multiple linear was used to estimate the coefficient was as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

$Y$  = Represents the dependent variable, Financial Performance

$\beta_0$  = Intercept of regression line

$\beta_1 - \beta_4$  = Partial regression coefficient of the Independent Variables

$X_1$  = Internet Banking Innovation

$X_2$  = Agency Banking Innovation

$X_3$  = ATM Banking Innovation

$X_4$  = Mobile Banking Innovation

$\varepsilon$  = error term or stochastic term.

4. DATA ANALYSIS RESULTS AND DISCUSSIONS

Response rate:

Questionnaires were self-administered whereby a total of 153 questionnaires were given out by the researcher to respondents. Ninety five (95) questionnaires were completely filled, returned and used for analysis in this study. This meant that the active sample was 95 respondents and this represented a response rate of 62.1% percent of the sample size which fell within a large sample size. Table 4.1 presents the percentage of response rate of the respondents. According to Kothari and Gang, (2014) a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent; therefore, this response rate was adequate for analysis and reporting.

Table 4.1: Questionnaire Response Rate

	Frequency	Percentage
Response	95	62.1%
Non-Response	58	37.9%
<b>TOTAL</b>	<b>153</b>	<b>100%</b>

Correlation Analysis:

Correlation analysis was carried out to establish the relationship between the independent variables and the dependent variable.

Coefficient of Correlation:

Pearson Bivariate correlation coefficient was used to compute the correlation between the dependent variable (financial performance) and the independent variables (internet banking innovation, agency banking innovation, ATM banking innovation and mobile banking innovation). According to Sekaran, (2015), this relationship is assumed to be linear and the correlation coefficient ranges from -1.0 (perfect negative correlation) to +1.0 (perfect positive relationship). The correlation coefficient was calculated to determine the strength of the relationship between dependent and independent variables (Kothari and Gang, 2014).

In trying to show the relationship between the study variables and their findings, the study used the Karl Pearson’s coefficient of correlation (r). This is as shown in Table 4.2 below. According to the findings, it was clear that there was a positive correlation between the independent variables, internet banking innovation, agency banking innovation, ATM banking innovation and mobile banking innovation and the dependent variable financial performance. The analysis indicates the coefficient of correlation, r equal to 0.112, 0.595, 0.585 and 0.551 for internet banking innovation, agency banking innovation, ATM banking innovation and mobile banking innovation respectively. This indicates positive relationship between the independent variable namely internet banking innovation, agency banking innovation, ATM banking innovation and mobile banking innovation and the dependent variable financial performance.

Table 4.2: Pearson Correlation

Correlations	Financial Performance	Internet Banking Innovation	Agency Banking Innovation	ATM Banking Innovation	Mobile Banking Innovation
Financial Performance	1				
Internet Banking Innovation	.112	1			
Agency Banking Innovation	.595**	.146	1		
ATM Banking Innovation	.279	.158	.585	1	
Mobile Banking Innovation	.551	.551	.551	.551	1

**International Journal of Novel Research in Humanity and Social Sciences**

Vol. 5, Issue 5, pp: (342-360), Month: September - October 2018, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

ATM Banking Innovation	<b>.585**</b>	.188	<b>.588**</b>	1	
	.000	.068	.000		
	95	95	95	95	
Mobile Banking Innovation	<b>.551**</b>	.168	.137	<b>.430**</b>	1
	.000	.103	.186	.000	
	95	95	95	95	95

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

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

**Coefficient of Determination (R2)**

To assess the research model, a confirmatory factors analysis was conducted. The four factors were then subjected to linear regression analysis in order to measure the success of the model and predict causal relationship between independent variables (internet banking innovation, agency banking innovation, ATM banking innovation and mobile banking innovation), and the dependent variable (financial performance).

**Table 4.3: Coefficient of Determination (R2)**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.773 <sup>a</sup>	.597	.579	2.69822

a. Dependent variable: Financial Performance

b. Predictors: (Constant), Mobile Banking Innovation, Agency Banking Innovation, Internet Banking Innovation, ATM Banking Innovation

The model explains 59.7% of the variance (Adjusted R Square = 0.579) on financial performance. Clearly, there are factors other than the four proposed in this model which can be used to predict financial performance. However, this is still a good model as Cooper and Schinder, (2013) pointed out that as much as lower value R square 0.10-0.20 is acceptable in social science research. This means that 59.7% of the relationship is explained by the identified four factors namely internet banking innovation, agency banking innovation, ATM banking innovation and mobile banking innovation. The rest 40.3% is explained by other factors in the financial performance not studied in this research. In summary the four factors studied namely internet banking innovation, agency banking innovation, ATM banking innovation and mobile banking innovation determines 59.7% of the relationship while the rest 40.3% is explained or determined by other factors.

**Regression Analysis:**

**Analysis of Variance (ANOVA)**

The study used ANOVA to establish the significance of the regression model. In testing the significance level, the statistical significance was considered significant if the p-value was less or equal to 0.05. The significance of the regression model is as per Table 4.4 below with P-value of 0.000 which is less than 0.05. This indicates that the regression model is statistically significant in predicting factors of financial performance. Basing the confidence level at 95% the analysis indicates high reliability of the results obtained. The overall Anova results indicates that the model was significant at F = 33.312, p = 0.000.

**Table 4.4: ANOVA**

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	970.090	4	242.523	33.312	.000 <sup>b</sup>
	Residual	655.236	90	7.280		
	Total	1625.326	94			

a. Dependent Variable: Financial Performance

b. Predictors: (Constant), Mobile Banking Innovation, Agency Banking Innovation, Internet Banking Innovation, ATM Banking Innovation

**Multiple Regression:**
**Table 4.5: Multiple Regression**

Coefficients <sup>a</sup>					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	5.659	3.213		2.761	.002
Internet Banking Innovation	.156	.105	.105	2.486	.004
Agency Banking Innovation	.489	.089	.460	5.488	.000
ATM Banking Innovation	.109	.109	.095	2.998	.003
Mobile Banking Innovation	.493	.083	.465	5.947	.000

a. Dependent Variable: Financial Performance

The regression equation was:

$$Y = 5.659 + 0.156X_1 + 0.489X_2 + 0.109X_3 + 0.493X_4$$

Where;

Y = the dependent variable (Financial Performance)

X<sub>1</sub> = Internet Banking Innovation

X<sub>2</sub> = Agency Banking Innovation

X<sub>3</sub> = ATM Banking Innovation

X<sub>4</sub> = Mobile Banking Innovation

The regression equation above has established that taking all factors into account (financial performance as a result of internet banking innovation, agency banking innovation, ATM banking innovation and mobile banking innovation) constant at zero financial performance was 5.659. The findings presented also shows that taking all other independent variables at zero, a unit increase in internet banking innovation will lead to a 0.156 increase in the scores of financial performance; a unit increase in agency banking innovation will lead to a 0.489 increase in financial performance; a unit increase in ATM banking innovation will lead to a 0.109 increase in the scores of financial performance; a unit increase in mobile banking innovation will lead to a 0.493 increase in the score of financial performance. This therefore implies that all the four variables have a positive relationship with agency banking innovation contributing most to the dependent variable.

From the table we can see that the predictor variables of financial performance as a result of internet banking innovation, agency banking innovation, ATM banking innovation and mobile banking innovation got variable coefficients statistically significant since their p-values are less than the common alpha level of 0.05.

**Results of Hypotheses Testing:**

1) The first research hypothesis, **H<sub>01</sub>**: Internet banking innovation has no statistically significant effect on financial performance of commercial banks in Mombasa County, Kenya ( $\beta = 0.105$ ;  $t = 2.486$ ;  $p \leq 0.05$ ) was rejected and conclusion made that there was a statistically significant effect of internet banking innovation on financial performance of commercial banks in Mombasa County, Kenya. This is consistent with Financial Times (2015) which posits that the provision of financial services with the use of personal computers, tablets, or mobile telephony devices has already become the dominant business model in the financial industry. The further spread of e-services and e-payments, including cross-border e-services and e-payments, will be facilitated, among others, by increasing the processing power of ICT devices and data transmission channels, improved cybersecurity (including the broader application of block chain technology), the broader use of digital valets, and the development of various kinds of e-payment gadgets.

2) The second research hypothesis, **H<sub>02</sub>**: Agency banking innovation has no statistically significant effect on financial performance of commercial banks in Mombasa County, Kenya ( $\beta = 0.460$ ;  $t = 5.488$ ;  $p \leq 0.05$ ) was rejected and conclusion made that there was a statistically significant effect of agency banking innovation on financial performance of commercial banks in Mombasa County, Kenya. This is consistent with Kithuka (2012) who sought to establish the factors influencing growth of agency banking in Kenya. The study sampled 100 Equity Bank agencies doing bank focused, bank led, and non-bank led transactions in Kwale County. The study established that convenience of the money transfer technology plus its accessibility, cost, support and security influence the use of agency banking.

3) The third research hypothesis, **H<sub>03</sub>**: ATM banking innovation has no statistically significant effect on financial performance of commercial banks in Mombasa County, Kenya ( $\beta = 0.095$ ;  $t = 2.998$ ;  $p \leq 0.05$ ) was rejected and conclusion made that there was a statistically significant effect of ATM banking innovation on financial performance of commercial banks in Mombasa County, Kenya. This is consistent with Hussein and Nyaoga (2017) who studied the effect of automated teller machines usage on operational performance of commercial banks in Nakuru County and established a significant positive relationship between automated teller machines usage and operational performance, the study also revealed a significant positive relationship between internet banking and operational performance; further the study also revealed a significant positive relationship between mobile banking and operational performance. The findings revealed that the combined effect of SST on operational performance was significant. The findings also revealed that among the SST, mobile banking had the greatest relationship with operational performance.

4) The fourth research hypothesis, **H<sub>04</sub>**: Mobile banking innovation has no statistically significant effect on financial performance of commercial banks in Mombasa County, Kenya ( $\beta = 0.465$ ;  $t = 5.947$ ;  $p \leq 0.05$ ) was rejected and conclusion made that there was a statistically significant effect of mobile banking innovation on financial performance of commercial banks in Mombasa County, Kenya. This is consistent with Kones (2014) who did a study on factors influencing use of mobile banking among Small and Medium Enterprises in Nakuru Central Business District. The study was based on a cross-sectional survey conducted through administration of questionnaires. The data was collected from a sample of 206 SME's in Nakuru CBD, Kenya. The study identified that trust and security, perceived cost, perceived convenience and ICT knowledge and skills had a positive significance on use of mobile banking hence are the main factors influencing use of mobile banking among SMEs. The successful development of mobile money services in Kenya provides a unique and interesting case study of how access to mobile phones can revolutionize and democratize the financial and banking industries of developing nations.

**Table 4.6: Hypotheses Testing**

Research Hypothesis	$\beta$	t	Sig.	Comments
<b>H<sub>01</sub></b> :Internet banking innovation has no statistically significant effect on financial performance of commercial banks in Mombasa County, Kenya	.105	2.486	.004	Reject H <sub>01</sub>
<b>H<sub>02</sub></b> :Agency banking innovation has no statistically significant effect on financial performance of commercial banks in Mombasa County, Kenya	.460	5.488	.000	Reject H <sub>02</sub>
<b>H<sub>03</sub></b> :ATM banking innovation has no statistically significant effect on financial performance of commercial banks in Mombasa County, Kenya	.095	2.998	.003	Reject H <sub>03</sub>
<b>H<sub>04</sub></b> :Mobile banking innovation has no statistically significant effect on financial performance of commercial banks in Mombasa County, Kenya	.465	5.947	.000	Reject H <sub>04</sub>

**5. SUMMARY OF THE FINDINGS, CONCLUSION AND RECOMMENDATIONS**

**Effect of Internet Banking Innovation on Financial performance:**

From the research findings, internet banking innovation had an effect on financial performance of commercial banks in Mombasa County-Kenya. Majority of the respondents found internet banking privacy, internet banking security and internet banking costs as key determinants of internet banking usage and thus helping attract revenue which in turn spurs

financial performance of commercial banks in Mombasa County-Kenya. The findings revealed that internet banking privacy, internet banking security and internet banking costs had a very strong effect on the financial performance of commercial banks in Mombasa County-Kenya. Thus the study results exhibited a high degree of positive significance on effect of internet banking innovation on financial performance of commercial banks in Mombasa County-Kenya.

**Effect of Agency Banking Innovation on Financial Performance:**

From the research findings, agency banking innovation had an effect on financial performance of commercial banks in Mombasa County-Kenya. Majority of the respondents found agency banking accessibility, agency banking costs and agency banking security as key determinants of agency banking usage and thus helping attract revenue which in turn spurs financial performance of commercial banks in Mombasa County-Kenya. The findings revealed agency banking accessibility, agency banking costs and agency banking security had a very strong effect on the financial performance of commercial banks in Mombasa County-Kenya. Thus the study results exhibited a high degree of positive significance on the effect of agency banking innovation on financial performance of commercial banks in Mombasa County-Kenya.

**Effect of ATM Banking Innovation of Financial Performance:**

From the research findings, ATM banking innovation had an effect on financial performance of commercial banks in Mombasa County-Kenya. Majority of the respondents found ATM service accessibility, ATM service costs and ATM service safety as key determinants of ATM banking usage and thus helping attract revenue which in turn spurs financial performance of commercial banks in Mombasa County-Kenya. The findings revealed that ATM service accessibility, ATM service costs and ATM service safety had a very strong effect on the financial performance of commercial banks in Mombasa County-Kenya. Thus the study results exhibited a high degree of positive significance on the effect of ATM banking innovation on financial performance of commercial banks in Mombasa County-Kenya.

**Effect of Mobile Banking Innovation on Financial Performance:**

From the research findings, mobile banking innovation had an effect on financial performance of commercial banks in Mombasa County-Kenya. Majority of the respondents found mobile banking cost, mobile banking accessibility and mobile banking security as key determinants of mobile banking usage and thus helping attract revenue which in turn spurs financial performance of commercial banks in Mombasa County-Kenya. The findings revealed that mobile banking cost, mobile banking accessibility and mobile banking security had a very strong effect on the financial performance of commercial banks in Mombasa County-Kenya. Thus the study results exhibited a high degree of positive significance on the effect of mobile banking innovation on financial performance of commercial banks in Mombasa County-Kenya.

**Conclusions:**

The study concluded the following:

**Effect of Internet Banking Innovation on Financial Performance:**

From the research findings, the study concluded that internet banking innovation had an effect on financial performance of commercial banks in Mombasa County-Kenya. The conclusion was that majority of the respondents found internet banking privacy, internet banking security and internet banking costs as key determinants of internet banking usage and thus helping attract revenue which in turn spurs financial performance of commercial banks in Mombasa County-Kenya. The findings concluded that internet banking privacy, internet banking security and internet banking costs had a very strong effect on the financial performance of commercial banks in Mombasa County-Kenya. Thus from the study results it was generally concluded that there was a high degree of positive significance on effect of internet banking innovation on financial performance of commercial banks in Mombasa County-Kenya.

**Effect of Agency Banking Innovation on Financial Performance:**

From the research findings, the study concluded agency banking innovation had an effect on financial performance of commercial banks in Mombasa County-Kenya. The conclusion was that majority of the respondents found agency banking accessibility, agency banking costs and agency banking security as key determinants of agency banking usage and thus helping attract revenue which in turn spurs financial performance of commercial banks in Mombasa County-Kenya. The findings concluded that agency banking accessibility, agency banking costs and agency banking security had

a very strong effect on the financial performance of commercial banks in Mombasa County-Kenya. Thus from the study results it was generally concluded that there was a high degree of positive significance on the effect of agency banking innovation on financial performance of commercial banks in Mombasa County-Kenya.

#### **Effect of ATM Banking Innovation on Financial Performance:**

From the research findings, the study concluded that ATM banking innovation had an effect on financial performance of commercial banks in Mombasa County-Kenya. The conclusion was that majority of the respondents found ATM service accessibility, ATM service costs and ATM service safety as key determinants of ATM banking usage and thus helping attract revenue which in turn spurs financial performance of commercial banks in Mombasa County-Kenya. The findings concluded that ATM service accessibility, ATM service costs and ATM service safety had a very strong effect on the financial performance of commercial banks in Mombasa County-Kenya. Thus from the study results it was generally concluded that there was a high degree of positive significance on the effect of ATM banking innovation on financial performance of commercial banks in Mombasa County-Kenya.

#### **Effect of Mobile Banking Innovation on Financial Performance:**

From the research findings, the study concluded that mobile banking innovation had an effect on financial performance of commercial banks in Mombasa County-Kenya. The conclusion was that majority of the respondents found mobile banking cost, mobile banking accessibility and mobile banking security as key determinants of mobile banking usage and thus helping attract revenue which in turn spurs financial performance of commercial banks in Mombasa County-Kenya. The findings concluded that mobile banking cost, mobile banking accessibility and mobile banking security had a very strong effect on the financial performance of commercial banks in Mombasa County-Kenya. Thus from the study results it was generally concluded there was a high degree of positive significance on the effect of mobile banking innovation on financial performance of commercial banks in Mombasa County-Kenya.

#### **Recommendations:**

The study recommends that bank managers need to ensure that there are bank agents in areas that are not yet covered. More so, they need to ensure that the agents are active. Banks should continue investing in innovation delivery channels because they will be able control their costs much better as compared to investment in brick and mortar branches. The volumes of transactions that can be processed on channels like the internet and mobile are high as compared to delivering such transactions using manual processes. This helps to minimize the cost per unit of service and hence better returns to the bank. In addition the managers of the commercial banks in Kenya should recognize and manage mobile banking innovations in order to boost their performance. Having a clear understanding of the exact nature of strategic effects of financial innovations will help firms to prioritize their market, production and process strategies, to be followed by appropriate subsequent action plan. Commercial banks should explore more ways of maximizing their utilization and returns from alternative banking.

The study recommends that banks may pursue consumers with demographics that favor internet banking and therefore, adopt appropriate technology. The study recommends apt management of associated risks to enhance customer confidence, ensuring accessibility to target consumers, incorporation of wide range of services, provision of consumer knowledge, and internal efficiency mechanisms to dealing with security concerns. Based on the findings, the study recommends to the management of commercial banks to adopt more ATM banking innovations as well as exploiting more innovation that enhance alternative banking. As such the banks should engage their employees to capacity-building, professional training and IT skills and competencies prior to and during the implementation of technological innovations in the organizations. The commercial banks should be focused in terms of their needs and using the right technology to achieve the goals.

#### **REFERENCES**

- [1] Ajide, F.M. (2016). Financial innovation and sustainable development in selected countries in West Africa. *Journal of Entrepreneurship, Management and Innovation*, 12(3), 85-111.
- [2] Arnold, M. (2017): *European banks to launch block chain trade finance platform*. Financial Times, June 27, Available at <https://www.ft.com/content/6bb4f678-5a8c-11e7-b553-e2df1b0c3220>



**International Journal of Novel Research in Humanity and Social Sciences**

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- [3] Bara, A., Mugano, G., & Roux, P.L. (2016). Financial innovation and economic growth in the SADC. *Journal of Business and Economics*, 6(2), 43-62.
- [4] Barnett, C. (2015): *Trends Show Crowdfunding to Surpass VC in 2016*. Forbes, April 9. Available at <https://www.forbes.com/sites/chancebarnett/2015/06/09/trends-show-crowdfunding-to-surpass-vc-in-2016/#2e2f0dc45476>
- [5] Beaglehole, R., Bonita, R., & Kjellstrom, R. (2016). *Basic Epidemiology*. (2nd ed.). Geneva: WHO publications.
- [6] Berger, A. N. (2013). The economic effects of technological progress. Evidence from the banking industry. *Journal of Money, Credit, and Banking*, 35(3), 22-41.
- [7] Central Bank of Kenya. (2014). *Bank supervision annual report*. Retrieved from <https://www.centralbank.go.ke/images/docs/Bank%20Supervision%20Reports/Annual%20Reports/2014BSAnnualReport.pdf>
- [8] Central Bank of Kenya. (2015). *Annual report*. Retrieved from [https://www.centralbank.go.ke/images/docs/CBKAnnualReports/Annual\\_Report\\_2015.pdf](https://www.centralbank.go.ke/images/docs/CBKAnnualReports/Annual_Report_2015.pdf)
- [9] Cooper, D.R. & Schindler, P. S. (2013). *Business Research Methods*, (12th ed.). Irwin McGraw-Hill.
- [10] Christensen, L. B., Johnson, R. B., & Turner, L. A. (eds.). (2011). *Research Methods, Design and Analysis*. (11th ed.). Boston: Pearson Education
- [11] Creswell, J.W. (2014). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*, 4th ed. London: SAGE publications
- [12] Cytonn (2018). *Cytonn Annual Market Outlook – 2018*. [www.cytonnreport.com](http://www.cytonnreport.com)
- [13] Deloitte (2018). *Banking Outlook - Accelerating the transformation*. Deloitte Touche Tohmatsu Limited, UK
- [14] DeVellis, R. F. (2012). *Scale development: Theory and applications*. Los Angeles: Sage. 109-110
- [15] EY (2018). *Global banking outlook 2018 - Pivoting toward an innovation-led strategy*. [EY.com/bankinginnovation](http://EY.com/bankinginnovation)
- [16] FT (2015): *Ten developments in digital finance*. *Financial Times*, December 14. Available at <https://www.ft.com/content/b679edf2-8a2d-11e5-90de-f44762bf9896>
- [17] Gros, D. (2017): *Implications of the Expanding Use of Cash for Monetary Policy*. CEPS Policy Insights, No. 2017/21. Available at [https://www.ceps.eu/system/files/PI2017-21\\_ExpandingUseOfCash.pdf](https://www.ceps.eu/system/files/PI2017-21_ExpandingUseOfCash.pdf)
- [18] GSMA. (2014). *Mobile Money for the Unbanked Annual report 2014*. Retrieved from: [http://www.gsmworld.com/documents/mmu\\_2014\\_annual\\_report.pdf](http://www.gsmworld.com/documents/mmu_2014_annual_report.pdf).
- [19] Gupta S., & Herman K. (2012). *Bank of America: Mobile Banking*, Harvard Business School Case.
- [20] Hornuf, L., & Schwienbacher, A. (2017): *Should Securities Regulation Promote Equity Crowdfunding?* August 15. Available at SSRN: <https://ssrn.com/abstract=2412124> or <http://dx.doi.org/10.2139/ssrn.2412124>
- [21] Hussein, M.A. & Nyaoga, R.B. (2017) Effect of Automated Teller Machines usage on operational performance of commercial banks in Nakuru County, Kenya. *International Journal of Economics, Finance and Management Sciences*, 5(3), 162-167.
- [22] Indick, W. (2013). Fight the power: The Limits of Empiricism and the costs of Positivistic Rigor. *The Journal of Psychology*, 136(1), 21-36
- [23] Kamochu, J. M. (2015). *The effect of electronic banking on the financial performance of commercial banks in Kenya*. Unpublished MBA project. Nairobi: University of Nairobi.
- [24] Kaynak, E., & Harcar, T.D. (2015). Consumer value creation in mobile banking services', *International Journal of Technology Marketing*, 1(1), 62–78
- [25] Kombo F., Paulík, J., & Kwarteng A. M. (2016). E-Banking functionality as a measure of customer satisfaction in the Czech and Kenyan banking sectors. *International Journal of Business and Commerce*, 1(10), 82-105.

**International Journal of Novel Research in Humanity and Social Sciences**

 Vol. 5, Issue 5, pp: (342-360), Month: September - October 2018, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

- [26] Kothari, C. (2014). *Research Methodology: Methods and Techniques*. (3rd ed.). New Delhi: New Age International Publishers Ltd.
- [27] Liang, J., & Lu, M. (2010) Technology acceptance model for wireless internet, Internet Research. *Electronic Networking Applications and Policy*, 3(13), 206-222
- [28] Malhotra, N.K. (2013). *Marketing Research. An Applied Orientation*. (5th ed.), New Delhi: Prentice-Hall of India Private Limited
- [29] Masilamani, R. & Aris, T. (2011). Reliability (internal consistency) of the content Questionnaire on job stress among office workers of a multinational company in Kuala Lumpur, *Journal of Strategic Management* 21 (2), 216-222.
- [30] Mendoza, N. B. (2015): *The next wave of development finance innovation Devex Impact*, Available at <https://www.devex.com/news/the-next-wave-of-development-finance-innovation-87139>
- [31] Mugenda, A. (2013). 'Social Science Research: Theory and practices'. Nairobi; Applied Research and Training services publication.
- [32] Mugenda, A. G. & Mugenda, O.M. (2012). *Research methods: Quantitative and Qualitative Approaches*. Nairobi: African Centre for Technology Studies Press
- [33] Nelms, T.C., Maurer, B., Swartz, L. & Mainwaring, S. (2017) Social payments: innovation, trust, bitcoin, and the sharing economy. *Theory, Culture & Society*. Epub ahead of print 20 December 2017. DOI: 10.1177/0263276417746466. Google Scholar
- [34] Nzioka, P. K. (2013). *The relationship between firm size and financial performance of commercial banks in Kenya*. Unpublished MBA project. Nairobi: University of Nairobi.
- [35] Panida, S. & Sunsern, L. (2012). An analysis of internet banking security of foreign portals, *International Journal of Bank Marketing*, 23(2), 153-175.
- [36] Raman, G. & Kumar, V. (2012). Interaction orientation and firm performance. *Journal of Marketing*, 72(1), 27-45.
- [37] Roberts, P., & Amit, R. (2013). The dynamics of innovative activity and competitive advantage: The case of Australian retail banking, 1981 to 1995. *Organization Science*, 14(2), 107-122.
- [38] San-Jose, L., Ituralde, T., & Maseda, A. (2009). The influence of information communications technology (ICT) on cash management and financial department performance: An explanatory model. *Canadian Journal of Administrative Sciences*, 26 (2), 150-169.
- [39] Saunders, M., Thornhill, A. & Lewis, P. (2012). *Research Methods for Business students*. (5th ed.). Harlow: Financial Time prentice-Hall.
- [40] Sekaran, U. (2013). *Research Methods for Business: A skill building approach* (5th Ed.). USA: John Willey & Sons' publisher.
- [41] Sekaran, U. & Bougie, R. (2011). *Research methods for Business: A skill Building Approach*. (5th Ed.). New Delhi: Aggarwal printing press
- [42] Simiyu, R.S., Ndiang'ui, P.N. & Ngugi, C.C. (2014) Effect of financial innovations and operationalization on market size in commercial banks: A case study of equity bank, Eldoret branch. *International Journal of Business and Social Science*, 5(8), 227-249
- [43] Simon, T. (2017). Research Methods Resources for Researcher Lecturer and Students, *Social Sciences Collection guides: Topical Bibliographies*, Retrieved from [www.bl.uk/socialsciences](http://www.bl.uk/socialsciences)
- [44] Tatu, V. T. & Senaji, A.R. (2016). Effect of electronic banking on customer satisfaction in selected commercial banks, Kenya. *International Academic Journal of Human Resource and Business Administration*, 2 (2), 41-63
- [45] The Economist (2017): *A surge in the value of crypto-currencies provokes alarm*, The Economist, Available at <https://www.economist.com/news/finance-and-economics/21722235-bitcoin-far-only-game-town-surge-value-crypto-currencies>

**International Journal of Novel Research in Humanity and Social Sciences**

Vol. 5, Issue 5, pp: (342-360), Month: September - October 2018, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

- [46] Tooker, L., & Maurer, B. (2016). The pragmatics of payment: adventures in first-person economy with Bill Maurer. *Journal of Cultural Economy*, 9(3), 337–345.
- [47] Tufano, P. (2013): Financial Innovation. In: Constantinides, George M., Milton Harris, and René M. Stulz (eds.) *Handbook of the Economics of Finance*, 1(1), 307–335. Available at [https://doi.org/10.1016/S1574-0102\(03\)01010-0](https://doi.org/10.1016/S1574-0102(03)01010-0)
- [48] Turner, C., A. (2016) *Between Debt and the Devil: Money, Credit, and Fixing Global Finance*, Princeton, NJ: Princeton University Press. Google Scholar, [Crossref](#)
- [49] Wilson, K., & Marco, T. (2014): *Improving the role of equity crowdfunding in Europe's capital markets Bruegel Policy Contribution*, Issue 2014/09, August. Available at [http://bruegel.org/wp-content/uploads/imported/publications/pc\\_2014\\_09\\_crowd\\_.pdf](http://bruegel.org/wp-content/uploads/imported/publications/pc_2014_09_crowd_.pdf)
- [50] Wu, M. L. (2016). Corporate social performance, corporate financial performance, and size: A Meta-Analysis. *Journal of American Academy of Business*, 8(1), 163-171.