



## **AN ANALYSIS OF FACTORS INFLUENCING ADOPTION OF E-FINANCING IN FINANCIAL INSTITUTIONS IN THIKA SUB-COUNTY, KIAMBU COUNTY, KENYA**

**NJURAITA Pauline Wanjiku<sup>1</sup>, Mr. SHAVULIMO Paul<sup>2</sup>, Mr. KIAMA Michael<sup>3</sup>**

<sup>1,2,3</sup> **Kenya Methodist University**

**Abstract:** This study sought to analyze factors influencing adoption of e-financing in financial institutions in Thika sub-county, Kiambu County, Kenya. The study adopted a descriptive cross-sectional survey. The study was carried out in the financial institutions and thus the study targeted 60 Top-Level Managers, 120 Technical Staff and 1320 Accounts' Clerks all totaling to 1320. Using the Central Limit Theorem, a sample of 12 financial institutions, that is, 20% of the targeted 60 financial institutions, were selected. Based on the same theorem, 300 respondents, that is, 20% of 1500, were selected. Questionnaires were used to collect data from Technical Staff and Accounts' Clerks whereas interviews were used to collect data from Top-Level Managers. Piloting study was conducted to pretest and validate the questionnaire. Quantitative data collected was analyzed using descriptive statistics specifically, percentages and frequencies. Data was then presented in tables. Hypotheses were tested using ANOVA at 95% confidence interval with the help of SPSS (Version 23). The study established that the levels of adoption of e-financing by financial institutions is below average. It is also evident that there numerous factors which influence adoption of e-financing in financial institutions. These include cost of technology, perceived risks, operational efficiency and competition. The study thus recommends that financial institutions should do proper planning of their financial resources and allocate adequate resources for adoption of e-financing. Financial institutions should devise strategies for risk management and lay ground for effective mitigation measures upon adoption of e-financing technology. Financial institutions should adopt e-financing as a way of improving their productivity and attendant profitability. Financial institutions are pressurized by their competitors to improve on profitability. Thus, the study recommends that financial institutions should adopt e-financing as a way of edging their competitors in the market.

**Keywords:** Cost of technology, Dynamics, E-Financing, Leadership style, Perceived risks, Operational efficiency

### **Introduction**

The rapid growth and popularity of the Internet has created great opportunities as well as threats to companies in various business sectors, to endorse and deliver their products and services using Internet as a distribution channel (Chau & Lai, 2013). Researchers have emphasized the importance of the Internet for financial services more than other industries (Mukherjee & Nath, 2013; Tan & Teo, 2010). Besides opportunities of this channel, banks and financial institutions across the world face new challenges to the ways they operate, deliver services and compete with each other in the financial sector. Cronin (2014). Posits that, driven by these challenges, banks and financial institutions have implemented delivering their services using this channel.

E-financing refers to 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 bill payment and so on, and new banking services such as electronic bill presentment and payment (Frust,

Lang & Nolle, 2014) without visiting to bank branch (Mukherjee & Nath, 2013; Sathye, 2013). The objectives of e-financing include cost containment through reduction in operating cost, performance improvement by making the service available at all times of the day, wider coverage by enabling the access to service from any location, revenue growth through better quality and additional non-financial services, and customer convenience through personalized service (Bradley & Stewart, 2012; Chau & Lai, 2013). From the customer's perspective, E-financing facilitates a convenient and effective approach to manage personal finances, as it is accessible 24 hours a day and 365 days in a year without visiting the bank and from any locations (Rotchanakitumunai & Speece, 2013). Although there is a significant growth of e-financing service users in almost every country, the number of financial transactions carried out over internet remains to be low. It is observed that potential users either do not adopt Internet banking or do not use it continually after adoption.

Mearian (2012) indicated that most of the banks' websites are getting accessed by huge number of customers in USA but only a minority of customers has made online financial transactions. Gartner expressed that out of 61% online users, only 20% of consumers carries out online banking in USA (Brown, 2012). Several studies have reported not only low adoption rate but also disparity in adoption rates among European countries. ACNielsen (2012) found that use of e-financing is increasing in Asian countries but it is still slower than estimation. Due to these slow adoption rates, the transformation of banking services from 'bricks and mortar' to 'clicks and mortar' is yet to eventuate to the extent it was predicted (Bradley & Stewart, 2012). Customers in some countries have ranked Internet banking as less important than other channels such as ATM or telephone banking (Aladwani, 2012; Rotchanakitumunai & Speece, 2013; Suganthi & Balachandran, 2012).

In order to be successful, banks and financial organizations are keen to understand to what extent customers are adopting or using Internet banking services. Courtier and Gilpatric (2013) recommended that banks and financial companies must survey customers' requirements on a regular basis in order to understand factors that can affect their intention to adopt or use Internet banking. In most countries in Sub-Saharan Africa, adoption of e-financing has been the in-thing in most financial institutions and has registered numerous success stories in terms of improved business, efficiency, comparative advantage and improved besides productivity. In a longitudinal study conducted in Ghana amongst 23 financial institutions, Hinson & Sorensen (2006) revealed that e-financing has made several financial institutions register remarkable progress in terms of efficiency, business image and have comparative advantage vis-à-vis their competitors. However, Aladwani (2001) contends that success stories of this technological advancement have not thrived without its fair share of challenges.

Stakeholders' attitudes, cost of adoption, lack of technical know-how, infrastructure development and policy formulation are the major challenges of e-financing. Technological problems like connect break in service while withdrawing cash from ATM and poor mobile service. Consistent with these assertions, Mbarika, Okoli, Byrd and Datta (2005), in a study carried out in Lesotho, indicated that the recent years have had profound technological changes among which is the advent of e-financing or the exchange of products and services and payments through telecommunication systems have been witnessed. Mbarika *et al* (2005) identified it as the fastest growing area for businesses. The monetary value of products and services ex-changed electronically was projected to be approximately US\$ trillion and based on the results of the current survey many respondents felt the estimates may have been surpassed by the close of year 2004.

Most industries have been influenced in different ways by e-financing and that the financial institutions have been subject to this technological change (Hinson & Sorensen, 2006). It is evident that banks and other financial institutions in developed and emerging markets are embracing e-financing. Karimzadeh

(2012) found that increased competition, changing business environments, globalization and the advancement of Information and Communications Technology are the important factors along with that have forced Banking and Financial services to change. Ridzwanl et al. (2012) noticed that Innovativeness and Familiarity significantly influence users acceptance of e-Banking. Vishnoi et al. (2014) observed that people are aware of e-banking as they feel it has advantages like convenience and saves time but they also feel that factors like security and privacy, trust, familiarity and speed seems hurdle in the acceptance of e-banking.

Singh (2014) said that customer can do multiple things from the comforts of home or office with e-Banking - a one stop solution for all banking needs. They proposed top three critical success factors of e-banking, cost and promotion; security and privacy; ease of use. Dixit and Datta (2010) investigate many factors like security & privacy, trust, innovativeness, familiarity, awareness level increases the acceptance of e-banking services among Indian customers. Their finding shows that in spite of users' security and privacy concern, adult customers are willing to adopt online banking if banks provide users necessary guidance. Devi and Malarvizhi (2010) understand that the customers are satisfied with the quality of e-banking services. But they face technical as well as administrative and procedural problems. Karjaluo et al. (2002) their finding depicts that bank managers can, by knowing the basic beliefs consumers hold about internet banking, create more effective customer communication, improve software and target prospects better concerning internet banking. There is wide agreement that internet banking will on the one hand have a great impact on the whole bank market, and on the other hand will be considered the most important retail banking delivery channel in the near future. Ismail and Osman (2012) identified eleven factors that affect the adoption of e-banking in Sudan. These factors include frequent breakdown of ATMs, inconvenient locations of ATMs and Electronic Points of Sale (EPOS), inaccessible internet, lack of means reporting technical problems, unclear legislations protecting e-transactions, slow banks response for correcting erroneous transactions, weak banks' role in raising clients' awareness, unclear e-banking guidelines and instructions, frequent power cut offs, and high e-banking services' fees.

Alam et al. (2010) present that banks perceive online banking as a powerful „value-added“ tool to attract and retain new customers while helping to eliminate costly paper handling and teller interactions. Online banking has managed to provide customers the convenience, efficiency, effectiveness, and most importantly, the speed needed in today's dynamic world. In Kenya, a recent survey conducted by CBK (2008) indicates that there is steady in-crease in use of e-financing technologies such as automated teller machine (ATM), mobile and Internet (online) banking, electronic funds transfer, direct bill payments and credit card. ATM banking is one of the earliest and widely adopted retail e-financing services in Kenya (Chau & Lai, 2013). However, according to an annual report by Central Bank of Kenya (CBK, 2008), its adoption and usage has been surpassed by mobile banking (M-banking) in the last few years (CBK, 2008). Currently, there are about 8 million users of M-banking services compared to 4 million people who hold accounts in conventional financial institutions in Kenya (CBK, 2008). This goes for financial institutions in Thika Sub-county where tremendous increase in number of people adopting e-financing which has been attributed to ease of use and high number of mobile phone users. This study sought to analyze factors influencing adoption of e-financing in financial institutions in Thika sub-county, Kiambu County, Kenya.

## **Statement of the Problem**

With advancement in technology, the omnipresent web has revolutionised interactions between industry and the business organisations (Nzioka, 2013). Online communications are not one-way street any more where an industry would broadcast its products to customers. Currently, customers are getting more and more acquainted to use of mobile and online platforms and the banking industry has established clever ways of adopting such channels for furtherance of their business. When financial institutions channel their services using these electronic platforms, then financial services are characterized by individuality, flexibility, mobility, and convenience in terms of independence of place and time. As Nzioka (2013) rightly observes, technology overcomes the tyranny of distance.

In the recent past, financial institutions have invested heavily on internet based electronic banking applications as well as mobile banking. As customers take up such electronic financial products, financial institutions benefit in terms of greater customer satisfaction and loyalty. The main financial institutions in Thika Sub County are commercial banks, SACCOs and micro finance institutions and all of them have made remarkable efforts in adopting technologically driven financial products which must meet their customer's common and specific needs. In addition, these products must not only be secure but should also win customers confidence in terms of security, reliability and usefulness. Only then will the adoption of the e-financing products by the financial institutions will bear fruits. Despite technology being available in the market, financial institutions are not at the same level in adopting e financing. Thus, the determinants of uptake of electronic financing by customers of financial institutions need to be empirically ascertained. This study therefore aimed at establishing factors influencing adoption of e-financing by surveying financial institutions in Thika Sub County.

## **Objectives of the Study**

The study was guided by the following specific objectives

- i. To determine the influence of cost of technology on adoption of e-financing in financial institutions in Thika Sub-county
- ii. To investigate the influence of perceived risks on adoption of e-financing in financial institutions in Thika Sub-county
- iii. To determine the influence of operational efficiency on adoption of e-financing in financial institutions in Thika Sub-county
- iv. To investigate the influence of Competition on adoption of e-financing in financial institutions in Thika Sub-county

## **Theoretical Literature Review**

A theory is a set of systematic interrelated concepts, definitions and propositions that are advanced to explain and predict phenomena (Cooper & Schindler, 2006). Various factors that influence the adoption of e-financing in financial institutions in this study are considered and are cost of technology, perceived risk, operational efficiency and competition. Theories that support the adoption of e-financing in financial institutions include: Technology Acceptance Model (TAM) Theory, Theory of Reasoned Action, Theory of Planned Behavior and Diffusion of Innovations Theory. They used to analyses factors influencing adoption of e-financing in financial institutions in Thika sub-county, Kiambu County, Kenya.

## **Technology Acceptance Model (TAM) Theory**

There are several models existing that have been used to investigate adoption of technology. Several studies focusing on adoption of mobile services have their roots in Technology Acceptance Model (TAM) originally proposed by Davies in 1986. The model is originally designed to predict uses acceptance of Information Technology and usage in an organizational context. TAM focuses on the attitude explanations of intention to use a specific technology or service; it has become a widely applied model for user acceptance and usage. There are a number of meta-analyses on the TAM that have demonstrated that it is a valid, robust and powerful model for predicting user acceptance (Silber & William, 1983). TAM model which deals with perceptions as opposed to real usage, suggests that when users are presented with a new technology, two important factors influence their decision about how and when they will use it (Chan & Ming, 2004). The first factor is perceived usefulness (PU) which was defined as "the degree to which a person believes that using a particular system would enhance his or her job performance". Secondly, the perceived ease-of-use (PEoU) which is defined as "the degree to which a person believes that using a particular system would be free from effort (Chan & Ming, 2004).

## **Innovation Theory**

The world is witnessing today profound transformations and acceleration as a result of the tremendous development of information technology and the steady growth of volume of information, which has led to the emergence of new types of transactions and activities in various fields (Michael & Bloodgood, 2010). The banking sector has been one of the first sections that have adopted many electronic applications to improve performance and gain a competitive advantage strategy. In light of the extensive use of information and communication technologies, the financial services industry and banking has provided new systems and applications that maximizes the use of modern technology and are now available. Therefore, it has become necessary for banks to change the concept of traditional banking service to remote banking services because of the rapid growth of electronic banking services by customers and increased competition among banks to reduce costs, raise efficiency and attract more customers (Davenport, 2003). Hence the bank agents have thrived and are currently estimated to have 33% penetration. The number of banks opening branches has decreased and is attributed to affordable agent banking and lowers service charges (Makori, 2003). Innovation in banking should be directed to at improving the infrastructure that fosters efficient financial services and international trade. In this study, innovation theory will be used to show how modern payment systems have transformed the technology of banking and facilitated charges in the strategy and structure of financial services organizations. Design, implementation and dissemination of payments systems and costs have come down according to bank case studies, Michael and Bloodgood (2010). Currently agent banking is an integral part of modern banking in many countries and the market is still growing.

## **Theory of Planned Behavior**

The theory of Planned behavior (TPB) is an extension of the theory of reasoned action (TRA) developed by Ajzen and Fishbein (Porter, 1985). Both theories were developed to predict and understand motivational influences on behavior, identify how and where to target strategies for changing behavior and to explain such behaviours. According to the theories the most important determinant of human behavior is behavioral intention. The individual's intention to perform certain behavior is a combination of the person's attitude towards performing that behavior and the subjective

norm. The extension included in TPB adds perceived behavioral control to the predictors of intention. This is because it is recognized that not all behaviors are in the volitional control of the individual. The TPB has been used in many studies in information systems literature (Porter, 1985). Predicting behavioral intention and actual behavior is extremely useful in the online environment. This medium has the peculiar characteristics of speed, ubiquity and wide reach; this holds huge advantages for businesses as they can now reach large user groups, in a timely manner (Porter, 1985). However, the disadvantage of this is that errors and miss-steps are glaring and may propagate very fast over large audiences. This leaves very little margin for error for any prospective online business venture. Being able to predict user behavior and its antecedents in relation to an online venture are of crucial importance (Davenport, 2003).

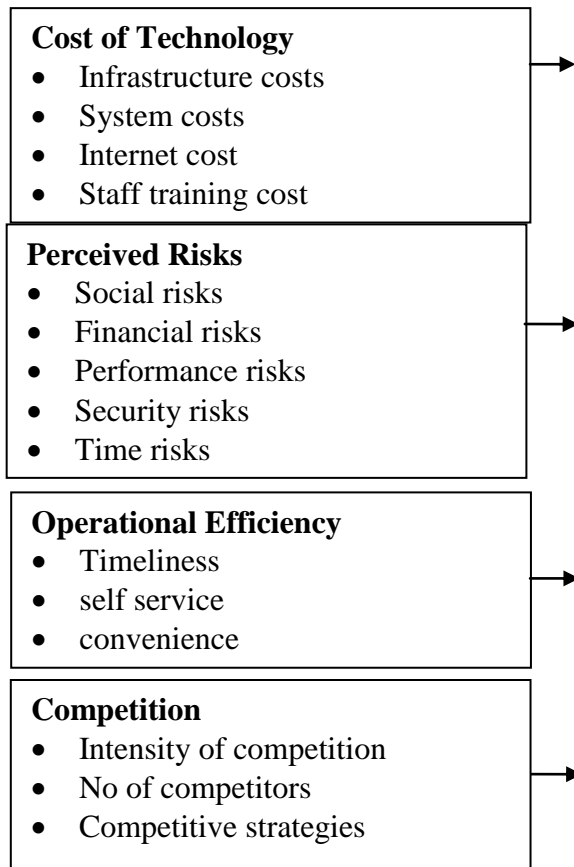
Online banking is no exception to this; it even takes on a more sensitive nature as a result of the underlying intention of facilitating relationships. The emphasis is thus on current customers and not so much on new ones. It is believed that attitudes formed during interaction with the banking website would form the basis of the user's attitude towards the electronic banking. The normative beliefs of user within the online banking environment would not differ much with regards to personalization within the same environment (Allen & Strahan, 2012).

### **Diffusion of Innovations Theory**

The theory of diffusion of innovations as described by Rogers (2015). Is well known. Rogers describes diffusion of innovation as “the process by which an innovation is communicated through certain channels over time among the members of social system. It is special type of communication in that the messages are concerned with new ideas (Rogers, 2003). A decision not to adopt an innovation relates to the rejection of the available new ideas. However, in order to explain the rate of adoption of innovations. Rogers suggested measurement of the following perceived characteristics of innovation, relative advantage, compatibility, complexity triability and observability.

### **Conceptual Framework**

Smyth (2004) defines a conceptual framework as a framework that is structured from a set of broad ideas and theories that help a researcher to properly identify the problem they are looking at frame their questions and find suitable literature. In this study, the conceptual framework will be based on stakeholders' attitudes, staff training, operational efficiency and competition which will constitute independent variables whereas adoption of e-financing will be the dependent variable as shown in Figure 1.

**Independent Variables****Dependent Variables****Figure 1: The Conceptual Framework Showing Relationship between Variables****Research Design and Methodology**

The study adopted a descriptive cross-sectional survey. According to Cooper and Schindler (2011), cross sectional studies are carried out at a particular point in time. Thika Sub-county has 60 financial institutions and therefore, the study targeted the 60 Top-Level Managers, 120 Technical Staff and 1320 Accounts' Clerks all totaling to 1320. Stratified sampling was applied to create 6 strata based on different categories of financial institutions in Thika Sub-county each consisting of 10 institutions. From each stratum (category), 2 financial institutions and Top-Level Managers were selected using purposive sampling. Purposive sampling was appropriate due to the fact that the sampled respondents hold responsibilities as implementers of policies. 6 Technical Staff and 42 Accounts' Clerks were selected using simple random sampling to eliminate bias and favoritism. This sampling procedure enabled the researcher to realize a sample of 12 Top-Level Managers, 36 Technical Staff and 252 Accounts' Clerks;

**Table 1: Sampling Grid**

Categories	Sample Size
Top-Level Managers	12
Technical Staff	36
Accounts' Clerks	252
<b>Total</b>	<b>300</b>

These are tools which were used to gather information about the specific set themes of research objectives. These included questionnaires and interview schedules. Pilot study was conducted amongst 5 Technical Staff and 10 Accounts' Clerks from 2 financial institutions in Thika Sub-county. The purpose of conducting the pilot study was to check on suitability and the clarity of the questions on the instruments designed, relevance of the information being sought and the language used and to test the reliability and validity of the instruments. The respondents who participated in the pilot study were not included during the actual data collection. Data analysis has multiple facets and approaches, encompassing diverse techniques under a variety of names, in different business, science, and social science domains. Data analysis began by identifying common themes. Irrelevant information was discarded whereas relevant information will be assigned codes and labels. Frequency counts of the responses were then obtained to generate descriptive information about the respondents and to illustrate the general trend of findings on the various variables that were under investigation. Qualitative data was analyzed qualitatively along the specific objectives whereas the quantitative data was analyzed using descriptive statistics such as frequencies and percentages and inferentially using ANOVA Test Analysis to test hypotheses at 95% confidence interval with the help of Statistical Packages for Social Science (SPSS Version 23). The qualitative findings of the study were presented in narrative forms whereas the quantitative findings were presented using tables.

### Results and Discussion

The researcher administered questionnaires to 36 Technical Staff and 252 Accounts' Clerks out of which 32-Technical Staff and 248-Accounts' Clerks questionnaires were filled and returned. The researcher also interviewed 8 Top-Level Managers. This gave a response rates as indicated in Table 2.

**Table 2: Response Rate**

Respondent Categories	Sampled Respondents	Those Who Participated	Achieved Return Rate (%)
Top-Level Managers	12	10	83.33
Technical Staff	36	32	88.89
Accounts' Clerks	252	248	98.41
<b>Total</b>	<b>300</b>	<b>140</b>	<b>96.67</b>

The above information shows that the total response rates was 96.67% affirming the fact that the response rate was sufficient and above 75% of the acceptable levels to enable generalization of the results to the target population (Kothari, 2005).

### Inferential Findings on the Influence of Cost of Technology on Adoption of E-Financing in Financial Institutions

To verify the possibility of difference between cost of technology and adoption of e-financing by financial institutions, data was collected on money spent in installing technology and the number of financial institutions which have adopted e-financing and results are shown in Table 3.



**Table 3: Results of the Money Spent in Installing Technology and the Number of Financial Institutions which have Adopted E-Financing**

Cost of Technology Installation	Number of Institutions which have Adopted E-Financing		
	Commercial Banks	SACCOs	Microfinance Institutions
1,000,000	7	5	3
3,000,000	11	9	5
6,000,000	17	13	10
9,000,000	20	15	13

Table 3 indicates that many financial institutions have spent quite amount of money to install technology. However, this varies from financial institution to another. It is also evident the cost of technology hinders many financial institutions from adopting e-financing technology. These findings further corroborate the assertions of Gerald and Dennis (2006) that adoption of a new technology often involves huge upfront costs, for example, investment in production, training of workers, marketing and research development. These results were subjected to ANOVA and results were as indicated in Table 4:

**Table 4: Analysis of the Difference between Means of Cost of Technology and the Number of Financial Institutions which have Adopted E-Financing**

	Sum of Squares	df	Mean Square	F	Sig
Cost of Technology	9187577000164.500	3	3062525666721.50		
Commercial Banks	67687196000413.490	3	22562398666804.5	7.367	.009
SACCOs					
Microfinance Institutions					
Residual	27562423000060.000	9	3062491444451.11		
Total	95249619000473.500	12	7937468250039.45		
Total	104437196000638.000	15	6962479733375.86		
Grand Mean = 1187508.00					

From the ANOVA Statistics in Table 4, the processed data, which is the population parameters, had a significance level of 0.009 which shows that the data is ideal for making a conclusion on the population's parameter as the value of significance (p-value of 0.009) is less than 5%, that is, p-value=0.009<0.05. It also indicates that the results were statistically significant and that there is a significant difference between means of the cost of technology and the number of financial institutions which have adopted e-financing technology. Hence, the research hypothesis,  $H_01$ , is rejected. These results were consistent with the findings of a study conducted in Nairobi County by Macharia (2009) which generated a p-value of 0.037<0.05. Thus, these findings affirm the fact that adoption of a new technology often involves huge upfront costs, for example, investment in production, training of workers, marketing and research development. Thus, financial institutions need to have an incentive to invest in a new technology only if it can later obtain profits that justify the initial investment. In other

words, financial institutions believe that the cost of e-financing tools and equipment is high, discouraging investment in them.

### **Inferential Findings on the Influence of Perceived Risks on Adoption of E-Financing in Financial Institutions**

To verify the possibility of difference between perceived risks and adoption of e-financing by financial institutions, data was collected on how often financial institutions incur risks and the number of financial institutions which have adopted e-financing and results are shown in Table 5:

**Table 5: Results of the Frequency of Incurring Financial Risks and the Number of Financial Institutions which have Adopted E-Financing**

Frequency of Incurring Risks in a Year	Number of Institutions which have Adopted E-Financing		
	Commercial Banks	SACCOs	Microfinance Institutions
1	7	5	3
2	11	9	5
3	17	13	10
4	20	15	13

Table 5 indicates that many financial institutions incur several risks which include fraud, hacking and other security fears which influence their desire to adopt e-financing. These findings further lend credence to the assertions of Sathye (2009) that perceived security risks are critical determinants of internet financing adoption. That is, perceived web security to be a significant determinant of customer's acceptance of online financing. These results were subjected to ANOVA and results were as indicated in Table 6.

**Table 6: ANOVA Analysis of the Difference between Means of Frequency of Perceived Risk Incurrence and the Number of Financial Institutions which have Adopted E-Financing**

	Sum of Squares	df	Mean Square	F	Sig
Frequency of Perceived Risks	194.250	3	64.750		
Commercial Banks	272.250	3	90.750	23.170	.000
SACCOs and Microfinance Institutions					
Residual	35.250	9	3.917		
Total	307.500	12	25.625		
Total	501.750	15	33.450		
Grand Mean = 8.63					

From the ANOVA Statistics in Table 6, the processed data, which is the population parameters, had a significance level of 0.000 which shows that the data is ideal for making a conclusion on the population's parameter as the value of significance (p-value of 0.000) is less than 5%, that is, p-value=0.000<0.05. It also indicates that the results were statistically significant and that there is a significant difference between means of the frequency of incurrence of perceived risks and the number of financial institutions which have adopted e-financing technology. Hence, the research hypothesis, **H<sub>02</sub>** is rejected. These results were consistent with the findings of a study conducted by Nchunge (2013) which generated a p-value of 0.046<0.05. Thus, these findings affirm the fact that lack of top management support is the other inhibiting factor in the adoption of electronic commerce applications.

This further points to the fact that different perceived risks influence business productivity, enhances comparative advantage and improves image of financial institutions.

### **Inferential Findings on the Influence of Operational Efficiency on Adoption of E-Financing in Financial Institutions**

To verify the possibility of difference between operational efficiency and adoption of e-financing by financial institutions, data was collected on transaction rates in financial institutions incur risks and the number of financial institutions which have adopted e-financing and results are shown in Table 7.

**Table 7: Results of the Transaction Rates of Financial Institutions and the Number of Financial Institutions which have Adopted E-Financing**

Transaction Rates (Customer/Day)	Number of Institutions which have Adopted E-Financing		
	Commercial Banks	SACCOs	Microfinance Institutions
100	7	5	3
234	11	9	5
345	17	13	10
412	20	15	13

Table 7 indicates that many financial institutions which have adopted e-financing have improved transaction rates. That is, the rates at which customers are served are every fast. These findings further lend credence to the assertions of Kimani (2015) that e-financing improve financial operations of most institutions and their profitability, particularly through increased revenues from deposit service charges. These results were subjected to ANOVA and results were as indicated in Table 8:

**Table 8: ANOVA Analysis of the Difference between Means of Transaction Rates and the Number of Financial Institutions which have Adopted E-Financing**

	Sum of Squares	df	Mean Square	F	Sig
Transaction Rates	17160.188	3	5720.063		
Commercial Banks	206135.188	3	68711.729	15.849	.001
SACCOs and Microfinance Institutions					
Residual	39019.063	9	4335.451		
Total	245154.250	12	20429.521		
Total	262314.438	15	17487.629		
Grand Mean = 76.19					

From the ANOVA Statistics in Table 8, the processed data, which is the population parameters, had a significance level of 0.001 which shows that the data is ideal for making a conclusion on the population's parameter as the value of significance (p-value of 0.001) is less than 5%, that is, p-value=0.001<0.05. It also indicates that the results were statistically significant and that there is a significant difference between means of the transaction rates in financial institutions and the number of financial institutions which have adopted e-financing technology. Hence, the research hypothesis, **H<sub>03</sub>**

is rejected. These results were consistent with the findings of a study conducted by Kimani (2015) which generated a p-value of  $0.004 < 0.05$ . Thus, these findings affirm the fact that adoption of e-financing technology improves operational efficiency of financial institutions. That is, e-financing improve financial operations of most institutions and their profitability, particularly through increased revenues from deposit service charges.

### **Inferential Findings on the Influence of Competition on Adoption of E-Financing in Financial Institutions**

To verify the possibility of difference between competition and adoption of e-financing by financial institutions, data was collected on transaction rates in financial institutions incur risks and the number of financial institutions which have adopted e-financing and results are shown in Table 9:

**Table 9: Results of the Transaction Rates of Financial Institutions and the Number of Financial Institutions which have Adopted E-Financing**

Annual Customer Increase	Number of Institutions which have Adopted E-Financing		
	Commercial Banks	SACCOs	Microfinance Institutions
2111	7	5	3
2479	11	9	5
3156	17	13	10
6789	20	15	13

Table 9 indicates that many financial institutions which have adopted e-financing have witnessed annual increase in their customer bases. These findings further corroborate the assertions of Quaddus and Hofmeyer (2013) and Gibbs, Kraemer and Dedrick (2013) that competitive pressure can strongly influence any bank to develop and adopt E-financing initiatives and it may affect the banks perception towards E-banking system. This implies that competition amongst institutions to offer banking services to the population has increased greatly, thus increasing efficiency and access. These results were subjected to ANOVA and results are shown in Table 10:

**Table 10: ANOVA Analysis of the Difference between Means of Annual Customer Increase and the Number of Financial Institutions which have Adopted E-Financing**

	Sum of Squares	df	Mean Square	F	Sig
Annual Customer Increase	3499496.188	3	1166498.729		
Commercial Banks	39380270.688	3	13126756.896	11.429	.002
SACCOs and Microfinance Institutions					
Residual					
Total	49717061.750	12	4143088.479		
Total	53216557.938	15	3547770.529		
Grand Mean = 916.44					

From the ANOVA Statistics in Table 10, the processed data, which is the population parameters, had a significance level of 0.002 which shows that the data is ideal for making a conclusion on the population's parameter as the value of significance (p-value of 0.002) is less than 5%, that is, p-value=0.002<0.05. It also indicates that the results were statistically significant and that there is a

significant difference between means of the annual customer increase in financial institutions and the number of financial institutions which have adopted e-financing technology. Hence, the research hypothesis,  $H_04$  is rejected. These results were consistent with the findings of a study conducted by Quaddus and Hofmeyer (2013) which generated a p-value of  $0.023 < 0.05$ . Thus, these findings affirm the fact that competition pushes financial institutions to adopt e-financing. In other words, competitive pressure can strongly influence any bank to develop and adopt E-financing initiatives and it may affect the banks perception towards E-banking system. This implies that competition amongst financial institution to offer banking services to the population has increased greatly, thus increasing efficiency and access.

## **Conclusions**

Drawing from the above findings, it is evident that the levels of adoption of e-financing by financial institutions is below average. Financial institutions adopt e-financing as a way to improve their institutional operations and efficiency. This is indicative of the fact that electronic financing services have benefits for both financial institutions and customers. It is also evident that there are numerous factors which influence adoption of e-financing by most financial institutions. These include cost of technology, perceived risks, operational efficiency and competition. From the study findings, it is thus evident that cost of technology influences adoption of e-financing in most financial institutions. In other words, acquisition cost of e-financing infrastructure (cabling, router, server etc) has an influence on adoption of e financing by their institution.

However, it is also evident that adoption of e-financing technology has not been smooth due to financial constraints of installing the technology. The cost of buying management information system, the installation and maintenance and staff training costs are very high. It is also evident that financial institutions are faced with numerous perceived risks. These include fraud, security fears or hacking. These perceived risks have had deleterious influence on adoption of e-financing. Most respondents alluded to the fact that financial institutions incur many risks such as fraud and hacking with numerous reported cases of fraudsters attempting to swindle customers which has been a problem in adoption of e-financing. Operational efficiency is another critical factor which influence financial institutions' ability to adopt e-financing in financial institutions. That is, for the financial institutions which have adopted e-financing, the e-financing system has been designed to ensure comfort of customers by availing transactions over 24 hours.

It is also evident that competition influences adoption of e-financing in financial institutions. It is also evident that competition influences the adoption of new technologies. That is, pressure from competitors and to fit in new markets influence adoption of e-financing. This attests to the fact that ensuring competition and entry opportunities for other market players, particularly smaller ones, must be an ongoing policy priority. Competitive pressure can strongly influence any bank to develop and adopt e-financing initiatives and it may affect the banks perception towards e-banking system.

## **Recommendations**

The study makes the following recommendations: On cost of technology, the study established that most financial institutions are yet to adopt e-financing due to cost implications. The study thus recommends that financial institutions should do proper planning of their financial resources and allocate adequate resources for adoption of e-financing. This will go a long way towards increasing their profitability and improve on their efficiency. On perceived risks, the study established that there

are numerous risks which hinder financial institutions from adopting e-financing. The study thus recommends that financial institutions should devise strategies for risk management and lay ground for effective mitigation measures upon adoption of e-financing technology.

On operational efficiency, the study established that financial institutions that register low levels of operations. Thus, the study recommends that financial institutions should adopt e-financing as a way of improving their productivity and attendant profitability. This may go a long way in reducing time and resource wastages. On competition, the study established that financial institutions are pressurized by their competitors to improve on profitability. Thus, the study recommends that financial institutions should adopt e-financing as a way of edging their competitors in the market. This will go a long way in increasing and retaining the number of customers.

### **Recommendations for Further Research**

A study should be conducted to examine the influence of staff and customer attitude on adoption of e-financing in financial institutions. A study should be conducted to establish the influence of management support on adoption of e-financing in financial institutions. A study should be conducted to assess the influence of staff training and competency on adoption of e-financing in financial institutions.

### **References**

- AcNielsen. (2002). *AcNielsen Consult Online Banking Research*. Retrieved from [www.consult.com.au](http://www.consult.com.au)
- Agboola, A.A. (2006). Electronic payment systems and tele banking services in Nigeria. *Journal of Internet Banking and Commerce*. 11(3).
- Alam, N., Magboul, I. H. M., & Raman, M. (2010). Challenges Faced by Sudanese Banks in Implementing Online Banking: Bankers Perception. *Journal of Internet Banking and Commerce*, 15(2), 1-9.
- Al-Somali, S. A., Gholami, R., and Clegg, B. (2009). An investigation into the acceptance of online banking in Saudi Arabia. *Technovation*. 29(2), 130–141.
- Bakkabulindi, F, Nkata, J. & Amin, M. (2006). Organizational Characteristics as Correlates of ICT Adoption in Makerere University. *Kampala International University Research Digest*, 1(2), 124-137.
- Bradley, L., & Stewart, K. (2002). A Delphi Study of the Drivers and Inhibitors of Internet Banking. *International Journal of Banking Marketing*, 20(6), 250- 260.
- CBK. (2010). Guidelines on Agency Banking- CBK/PG/15, Nairobi. Retrieved on May 10, 2017 from <http://www.centralbank.go.ke/downloads/bsd/guideline%20on%20agency%20banks%20pg%20.pdf>
- Collins, J. and Hussey, R. (2003). *Business Research*. 2nd Ed. Palgarve Macmillan.
- Dedrick, J. and Kraemer, K.L (2008). China IT report” *The Electronic Journal on information systems in Developing countries*. 6 (2),1-10
- Frust, K., Lang, W., W, & Nolle, D., E. (2014). *Internet Banking: Developments and Prospects*: Office of the Comptroller of the currency (September).
- Gibbs, J, Kraemer, K and Dedrick, J (2013). Environment and Policy factors shaping E- commerce diffusion: a cross-country comparison. *The information society*, 19(1),18.

- Hinson, R. & Sorensen, O. (2006). E-business and small Ghanaian exporters: Preliminary micro firm explorations in the light of a digital divide', *Online Information Review*, 30 (2), 116-138.
- Kaleem, A. and Ahmad, S. (2008). Bankers' perceptions of electronic banking in Pakistan", *Journal of Internet Banking & Commerce*. 13(1), 1-16.
- Karjaluoto, H., Mattila, M., & Pento, T. (2002). Electronic banking in Finland: Consumer beliefs and reactions to a new delivery channel. *Journal of Financial Services Marketing*, 6(4), 346-361. <https://doi.org/10.1057/palgrave.fsm.4770064>
- Kinyanjui, M., N., & McCormick, D. (2002). *Ecommerce in the garment industry in Kenya: usage, obstacles and policies, Report for project: Ecommerce for Developing Countries: Building an Evidence Base for Impact Assessment*: Sussex, Institute for Development Studies.
- Kumar, K., McKay, C., & Rotman, S. (2010). *Microfinance and Mobile Banking: The Story So Far*. Focus Note 62. Washington, D. C: CGAP.
- Lyman, T., Pickens, M., & Porteous, D. (2008). *Regulating Transformational Branchless Banking Mobile: Mobile phones and other Technology to increase Access to finance*.
- Macharia, J. (2009). *Factors affecting E-commerce Adoption: Nairobi United States*, International University.
- Nancy, B., Lockett, A., Winklhofer, H. and Christine, E. (2001), "The adoption of internet financial services: a qualitative study", *International Journal of Retail & Distribution Management*, 29 (8), 390-398.
- Nzioka, B.M. (2013). *The effect of online banking on cost efficiency in commercial banks in Kenya. Unpublished MBA thesis of University of Nairobi*.
- Peterson, & Rajan. (2003). *Distance Still Matters: The Information Revolution in Small Business Lending and the Persistent Role of Location*.
- Roberto, Fuentes, Rubén, Hernández-Murillo, & Gerald, L. (n.d.). *Strategic Online Banking Adoption*.
- Sathye, M. (2013). Adoption of Internet banking by Australian consumers: an empirical investigation. *The International Journal of Bank Marketing*. 17(7), 324.
- Venkatesh, V. (2003). Trends and developments in electronic lending: a preliminary research in Taiwan," *International Journal of Electronic Finance* 1(2), 241 - 259.
- Walker, B. H. (2005). A theoretical integration of user satisfaction and technology acceptance. *Information Systems Research*, 16 (1), 85-102.
- Zhao, H (2014), Perceived risk and Chinese consumers' internet banking Service Adoption, *International Journal of Bank Marketing*, 26(7), 505-525.