International Journal of Current Aspects, Volume 3, Issue IV, 2019, PP 65-79, ISSN 2616-6976
IJCAB

Mobile Banking Adoption and Financial Credit Accessibility in Wote Sub – County, Makueni County, Kenya

Kibicho Nahashon Kairo[1], DR. John Mungai[2]

[1]*Correspondent Author, School of Business, Kenyatta University, Kenya*

[2]*Lecturer, Department of Accounting and Finance, School of Business, Kenyatta University, Kenya*

ABSTRACT

Although the financial system is a vital component of the socio-economic development of any nation, most Kenyans lack access to formal financial credit services. This arises due to the cause of putting up bank branches in the rural areas is deemed not economically viable. Most banks have partnered with Mobile Network Operators to help mitigate this problem by introducing the use of Mobile banking (M-banking) technology in accessing vital banking services such as financial credit. However, this effort may not attain success if the factors inhibiting the use of M-banking technology have not been assessed. The purpose of this study was to establish the effect of Mobile banking adoption on financial credit accessibility by residents in Wote sub-county. This study was necessitated by the current emerging trend of accessing financial credit through the Mobile banking system. This study adopted a technology acceptance model to establish the effects of adopting mobile banking and its application in use of banking services among residents of Wote sub-county. The study was guided by the following objectives: To establish the effect of perceived usefulness, perceived ease of use, and perceived risk of using mobile banking technology and financial credit accessibility in Wote sub-county, Makueni county, Kenya. Descriptive research design was employed in which the study population comprised the residents of Wote sub-county. The target population of the study consisted of 137,944 mobile money users across both banked and non-banked population in Wote sub-county and the sample size comprised of 138 participants who were selected through the use of simple random sampling technique. Data was collected using a questionnaire whose reliability was established by use of Cronbach's Alpha. All items in the questionnaire had a score of above 0.7 which was deemed to be the acceptable threshold. The questionnaires were administered through drop and pick later method. The data collected was processed and analysed using SPSS. Descriptive statistics such as percentages, frequencies, standard deviation and mean scores were used. Afterwards, the research findings were presented using frequency tables, pie charts and bar graphs. Multiple regression analysis was used to analyse and draw inferences from the research data. The results indicated that perceived usefulness of mobile banking technology perceived ease of use of mobile banking technology, and perceived risk of using mobile banking technology were statistically significant in accessing of financial credit. The intervening variable- customers' attitude- was found to be non-significant. This study recommended that both the banks and MNO's to continuously invest in product improvement of mobile banking systems to ensure the uptake of mobile credit is enhanced. The study also recommended that the financial service providers should engage in education and extensive customer awareness on use of mobile applications to access mobile credit as well as draw up strategies to reduce the mobile phone operational costs such as the interest charged on mobile loans which are a major hindrance. Further, the banks and MNO's should increase extra security features in their systems to increase trust in accessing mobile credit. Finally, the service providers should make mobile banking more user friendly for ease of financial credit access by incorporating graphics interface.

Key Words: *Mobile Banking, Financial Credit Accessibility, Financial Access, Commercial Banks*

DOI: 10.7176/ijcab.v3iIV.47, URN: nbn:de:0000ijcab.v3iIV.471

Cite this Article:

Kibicho, N., & Mungai, J. (2019). Mobile Banking Adoption and Financial Credit Accessibility in Wote Sub – County, Makueni County, Kenya. International Journal of Current Aspects, 3(IV), 65-79. http://journals.ijcab.org/journals/index.php/ijcab/article/view/47

1. INTRODUCTION

Groups that typically had limited access to formal bank services have greatly benefited from the financial products and services offered through the M-Pesa platform. Particularly, its short-term Pay Bill Account service enables the users to access financial credit for a variety of purposes, including expenses relating to education, medical needs, and disaster relief. Additionally, M-Pesa has also empowered business creation with many small entrepreneurs relying on M-Pesa for nearly all transactions or offers a service that is a derivative of the M-Pesa platform. The introduction of M-banking has transformed the banking sector in their operations leading to the application of new financial products such as mobile banking services aimed at reducing costs and expanding customer base reach (Anyasi & Otubu, 2009; Mari, 2003; Ayo, Adewoye & Oni, 2010). Mobile banking is a form of technology that allows one to access various financial transactions offered by formal banking institutions through the use of a mobile device such as a Personal Digital Assistant (PDA) or a mobile handset. The banking sector in Kenya has embraced M-banking services in the provision of vital financial services such as financial credit access to its' Kenyan clientele (Anyasi & Otubu, 2009).

The introduction of access to financial credit through the mobile phone is one element that has been embraced with high expectation in the developing countries. Majority of rural-based users in third world countries do not have any kind of access to financial credit services, and enabling these "unbanked" users to be incorporated into the formal established banking institutions is a priority for most states (Ivatury & Pickens, 2006; Morawczynski, 2008). For the poor to be perceived as viable customers' there is need to explore better approach of assisting them profitably. The application of appropriate technologies can partly resolve the problem of extension of branch networks which is often costly. Provision of mobile-based banking services has offered a great opportunity for reaching the poor people with accessibility to mobile handsets. Accessibility of mobile handset usage has been necessitated by the mobile networks ability to penetrate remote areas at a minimal cost. Hence they mostly tend to have more trust and familiarity with MNOs than the traditional banking institutions. Studies have indicated that overall financial advancement and access to financial credit services have a significant effect on poverty reduction and economic growth (Kimenyi & Ndung'u, 2009).

In Kenya, M-Pesa has been so successful that formal banking institutions have come to view it as a serious competitor. Initially, these banks wanted to limit M-Pesa by lobbying for regulations from the Kenyan government, but gradually they have begun to offer mobile banking services with the intent of disrupting M-Pesa's monopoly of the mobile money market. As more players enter the system, the mobile money banking may become even more widely accessible. The emergence of other players such as M-shwari, KCB M-Pesa, M-Coop cash, Equitel Eazzy loans services, Pesa Pap from family bank, etc has culminated to the proliferation of Mobile banking services on a wider scale allowing clients to access affordable, instantaneous loans via mobile phones. The personal traits of mobile banking users are vital determinants of their decisions to

adopt M-banking, and that understanding clients perceptions of M-banking services will enable service providers to plan their marketing strategies (Sulaiman, 2007). Mobile banking has created a flurry of activities in the global financial services industry. In fact, it is leapfrogging formal traditional banking and now most of the top banks are providing their own mobile banking solutions, eventually reaping the benefits of technology that comes via mobile phones and introduce the service as a means of executing fast and efficient services, whereas financial institutions of various magnitudes are vigorously assessing their position in the mobile banking world. Subsequently, has created a level playing field for not only formal banks but also mobile network operators (Feig, 2010).

Porteous (2006) asserts that in most African countries the accessibility to retail banking systems is insignificant though there exist no accurate figures to confirm the proportion of people who are banked in whole of Africa. Some of the national household surveys done in a few countries among them Kenya, indicate that in a decade or less of the introduction of mobile phone most people possess these handsets as they have bank accounts even though the bank accounts has been available for a longer time. According to Venable Telecommunications (2008), there are different factors which provide a pivotal role in the adoption of these relatively new services. These factors could be social, technological or economical. Some of the social factors identified include the social context of transactions, conceptualizing electronic money, awareness, attitude towards change (embracing new technology), the convenience of the service, trust in one's bank or service provider and the comfort that people have in using these services/ products. Economic factors include the cost of the service, mobile phone access, marketing strategies and availability of alternatives. Technological factors include security and privacy concerns, service availability and reliability, ease of use, handset operability, network coverage, and availability of the service on various mobile networks.

Mobile banking is basically a system of M-commerce that allows users to perform virtual banking related services at any place and time of their convenience (Suoranta, 2003). Mobile banking has created formal access to financial services to those who currently lack it and gradually increased the efficiency of payment systems. This could lead to making banking more convenient and affordable for bank account holders (Porteous, 2006). This signifies that Kenya will be able to achieve its ambition of attaining higher savings levels to enable financing of investment requirements through the use of M-banking technology (Kenya's Vision, 2030). M-banking technology provides other various financial functions, such as payment of bills, micropayments to merchants, business to business (B2B) transfers, long-distance remittances, business to person (B2P) transfers and person to person (P2P) transactions. Today, various institutional and business models provide these mobile banking technologies. Some of the M-banking services are exclusively offered in formal banks and some by MNO's, while others involve collaboration between a bank and a MNO (Porteous, 2006).

The banking sector has drastically evolved ensuring its survival having encountered increased competition over the last few years due to increased innovations among the various players and new entrants into the financial market, through the provision of mobile banking products. One of the biggest impediments being faced by banks in Kenya is stiff competition from the most unexpected sector: the telecommunication industry, mainly Safaricom. Since Safaricom launched the M-Pesa platform in 2007, within a relatively short period it already had more than 10-million users and enabling most of the poor and rural Kenyans with access to financial and banking services that were previously out of reach, because either the traditional banking services were too costly for them or were almost inaccessible (Ivatury & Mas, 2008). New and innovative products

are being developed by firms to enable retention of current clients and open up new ventures. M-banking technology is one of the innovations embraced by the banking fraternity in accessing loans and other financial services. A sound banking system is mainly regarded as an enabler of economic growth and a key pillar of vision 2030 (Koivu, 2002). Accessibility of financial credit is crucial for the overall development of any sector of a nation. The agricultural sector in the country has faced a major challenge in accessing finance. Poverty can be reduced amicably by enhancing access to mobile banking services, such as loans, savings, deposits, insurance, and payments. Savings can assist the rural people to invest in productive ventures such as livestock, through credit access which may also assist the growth of their business ventures, and insurance can continuously generate a steady income for the family if the breadwinner tends to be incapacitated (Anyasi & Otubu, 2009).

Lack of access to finance credit tend to deter investments in farm equipments to increase production, invest in education or health, start a micro-enterprise, or even seek better opportunities by the rural population. In addition, formal monetary exchanges require a physical location and people need transportation to access the location, both of which can be problematic in infrastructure-constrained countries such as Kenya, especially in rural areas. Technology is applied nowadays by business ventures to improve growth and make them competitive (Anyasi & Otubu, 2009). Globally, various ventures use the cell phones to offer banking services, not only to the unbanked population but also to those with formal bank accounts. Yet relatively a few scholarly research has been undertaken on the utilization of the mobile banking systems technologies (Donner & Tellez, 2008). Research done on the adoption of mobile banking technology and its socio-economic impact in the developing countries are scanty because the systems are so new (Maurer, 2008). There has been less focus on the socio-economic and cultural fronts encompassing usage of mobile banking technologies. Additionally, the few researchers who have undertaken research in mobile banking have come up with varied conclusions on the most vital factors influencing its adoption.

Chafey (2003) states that the manner in which wireless devices (such as mobile phones) are utilized nowadays has also changed in a relatively short duration of time. In accessing their bank accounts, consumers are gradually embracing their portable wireless devices as an alternative optional means. Mobile banking has been one of the rapidly growing sectors in the universe and continues to grow. The M-banking offers a various financial services such as micro-payments to business entities, utility bill-payments, overseas remittances as well as money transfers among individuals. Most of the mobile banking systems are offered exclusively by formal banks, others by Mobile Network Operators, while others involve collaboration between bank and a Mobile Network Operator (MNO) (Porteous, 2006). According to the Communication Authority of Kenya (2012), it stated that the Mobile banking services such as access to financial credit sector in Kenya has experienced rapid increase over the recent years. The reforms in the telecommunications sector, has been initiated by the implementation of The Kenya Communication Act according to Communication Authority of Kenya (CAK). This has culminated in exponential growth of Mobile Telephony forming the basis for a successful mobile banking technology which eventually influences access to financial credit (Kimenyi & Ndung'u, 2009).

According to the International Telecommunications Union (2005) report, it shows that mobile banking adoption has gradually increased with the rise in the use of mobile or wireless handsets in the recent past which have ultimately influenced access to financial credit. Studies undertaken in beginning of 2000 indicated that European states including France, Ireland, UK, Scandinavian

countries, and Germany, alongside Japan and Canada were among the pioneers in mobile banking. Some Asian countries such as Malaysia and Singapore, mobile banking penetration was on the rise whereas New Zealand and Australia were among the slow adopters. However, other studies conducted in mid-2000s showed that mobile banking had grown rapidly in Africa than the rest of the world within a relatively short time, and was expected to continue increasing. According to the International Telecommunications Union (2005), there are about two billion users of mobile handset worldwide. There is a remarkable impact on socio-economic well-being of people arising from the increase in number of mobile handsets usage. The use and adoption of M-banking has a significant positive impact on overall economic growth, and has doubled in third world nations compared to first world nations. Specifically Africa it has been noted that "people in Africa use mobile phones very differently. Most noticeably is the accessibility of mobile phones as the overall impact of mobile banking services such as financial credit extends well beyond what might be suggested by the number of subscriptions only" (ITU, 2005). Safaricom (2007) report asserts that the availability of mobile banking has enhanced customer service and access to financial credit services. It has also improved banks' revenue generation, competitive advantage, expense reduction, and time-saving. With the incorporation of mobile phones, banking services have increased in popularity. Banks are now trying to adopt mobile banking as one of the ways to make it easier for their customers to undertake their transactions and keep track of their accounts by use of mobile handsets. In Kenya, the first bank to embrace the mobile banking services was the Cooperative Bank of Kenya then later other banks also started adopting mobile banking. By March 2007 over one million Kenyans were recorded to have used mobile banking through M-Pesa system. In the course of eight months, about US$ 87 million (Kshs 8.7 billion) had been transacted through the M-Pesa systems.

Wote sub-county is located in the south eastern region of Kenya within Makueni County. It consists of six locations, namely: Muvau, Wote, Nziu, Kikumini, and Mumbuni where this study was concentrated. According to KNBS (2016) Mobile phone coverage rate stood at 85% in 2015 indicating a larger population having access to mobile services which has opened up opportunities for growth in both financial and telecommunications sector. Mobile banking services serve as a solution to inhibiting the rural poor from accessing financial credit services, eventually acting as a component to aid in development of human capital and assist the rural people evade the negative consequences. Over half of Kenya population who live in poverty and mostly concentrated in rural-urban areas are entirely unbanked. Porteous (2006) asserts that as unbanked people utilize their mobile gadgets they become accessible at minimal costs and highly bankable by virtue of basic transactional function tends to be more viable to offer through the phone, hence the cost emphasis. Basically, accessibility of banking services required customers to visit their bank branches and queue which was time consuming and inconvenient leading to customer dissatisfaction. But through the introduction of Mobile banking technology in the financial institutions has led to an increase in levels of customer satisfaction. Globally financial institutions have ventured into use of virtual banks, mobile banking and internet banking to reduce their user's costs as well as improve on customer satisfaction (Ophir, 2012)

According to Rutto (2014) some banks are implementing punitive measures such as exorbitant fees and commissions to deter clients from going to their banking branches. The levels of customer satisfaction have increased with merging of technology and service delivery amongst financial institutions. Most of the financial institutions globally have recognized that the use of technology such as mobile banking has various benefits such as cost efficiency, operational efficiency and improved customer loyalty. Customer loyalty and satisfaction has been the major impetus towards adoption of technology use and infusion in the banking sector hence financial

institutions have automated most of their services such as deposits, withdrawals, cheque book request, funds transfers, and financial credit services that do not need human effort to execute (Finacle, 2013). Customers' attitude towards change is another factor which influences adoption of mobile banking. Their mobile banking decisions are determined by the personal characteristics of mobile banking users (Sulaiman, 2007). Attitude can also be attributed to the age of the users with the older people likely to find it daunting in using mobile technology. Hence its' widely assumed that older people are more reluctant or rigid in adopting technology which may inhibit accessing of financial credit through mobile banking (Monitise, 2012).

According to Yu (2013) that despite the observed advantages that would arise from the use of this service, still, the number of mobile banking users hasn't increased as it was anticipated and indicated that lack of trust in m-banking applications was among the causes that led to the little adoption of mobile banking. Kenyan banks have embraced M-banking technology to offer affordable and convenient financial services. Safaricom introduced M-Pesa in 2007 which provided the platform for mobile banking and all the transactions were operated through this technology. The embrace of mobile banking in Kenya was so high that it was the trendsetter in the mobile banking adoption services and its performance was great compared to all neighboring countries. The mobile network providers have established the potential of mobile banking technologies to users while building loyalty, increasing revenues and messaging costs (Donner & Tellez, 2008). Sulaiman (2007) argue that the vital determinants of mobile banking adoption decisions by mobile banking users are their personal traits. This grants the financial systems players with more know-how of the perceptions of customers' in mobile banking services and assists in planning their promotion approaches and marketing strategies for future of M-banking. The new services provide a mode of transferring funds from one location to another and provide an option of the financial systems provided by traditional banks, and other financial institutions. In Kenya, acceptance of M-banking has been significantly high with about two million subscribers enrolled with Safaricom M-Pesa system within one year of launch nationally in 2007 (Ivatury & Mas, 2008).

2. STATEMENT OF THE PROBLEM

There has been a remarkable advancement to adoption of Mobile Banking in Kenya since its inception in 2007.This achievement is attributed to affordable and accessible services offered impacting also the low income earners. Mobile banking is considered easy to use yet efficient and reliable with the potential to extend financial Credit accessibility to the unbanked or those preferring cost effective financial services (Mbogo, 2010). According to ICT survey by KNBS (2016), 28.4% of mobile users in Wote sub-county have access to mobile financial credit against the national average of 39.6% of mobile users who are accessing mobile credit. Accessibility to formal financial services that include financial credit continues to be a hindrance for the underprivileged individuals in the society world-wide. These individuals have for long been facing obstacles from participating in the formal banking systems. The financial institutions have been faced stiff competition which has culminated in closing down of some local outlets, deterring entry into these locations by formal financial institutions (Agarwal, 2010). Remarkable improvement in the formal banking has been witnessed but only 43.7% have access to formal financial services in the urban areas and 21.3% access to the rural areas. (Financial Sector Deepening Kenya et al. 2013).

Various studies on the impact of Mobile banking on financial services offered by financial institutions and MNOs exist. Musara (2010) undertook a study on whether technological innovations such as Mobile banking have resulted in increased efficiency and cost saving for bank

customers. A study by Murega (2013) on relationship between use of mobile money services and financial inclusion in Kenya indicates that the adoption of mobile banking has been vital in reinforcement of the various services and its suitability to those people who have been excluded from the formal banking system. He further adds that the essential players towards this remarkable increase of mobile banking services are the increased number of subscribers with access to the mobile handsets. Munyi, (2011) in his study on responses by financial institutions to the adoption of mobile banking indicates that there has been remarkable improvement in the technology and solution development in both MNOs & financial institutional set ups both aiming at ensuring that there is improved availability of financial services when needed at low transactional costs and conveniently. The Author further indicates that since 2007 there has been an unprecedented competition to financial institutional products from the rapid evolution and remarkable success on mobile banking services leading to increased access and availability to financial ability at the convenience of the mobile phone. With all the studies that have been done, none has been done to try and establish the effect of mobile money on the financial performance of the commercial banks. This study therefore sought to establish the scope of access to financial credit services through the adoption of mobile banking, the effects, and challenges arising from implementation of M-banking so as to fill the knowledge gap.

3. OBJECTIVES

The general objective of the study was to establish the effect of mobile banking adoption on financial credit accessibility in Wote sub-county, Kenya.

The specific objectives are:

i. To establish the effect of perceived usefulness of mobile banking technology on financial credit accessibility in Wote sub-county, Makueni county, Kenya.
ii. To determine the effect of perceived ease of use of mobile banking technology on financial credit accessibility in Wote sub-county, Makueni county, Kenya.
iii. To establish the effect of perceived risk of use of mobile banking technology on financial credit accessibility in Wote sub-county, Makueni county, Kenya.
iv. To assess the intervening effect of customer's attitude on the relationship between Mobile banking adoption and Financial credit accessibility in Wote sub-county, Makueni county, Kenya.

4. THEORETICAL LITERATURE REVIEW

In this section, the theories that underpin the study are discussed.

4.1 Technology Acceptance Model (TAM)

Technology acceptance Model was developed by Fred David in 1989. TAM is a hypothetical model that describes how individuals tend to embrace and adopt an innovation, Davis (2009) indicates that the Technology Acceptance Model (TAM) can be utilized to predict acceptance and rejection of a new innovation by showing inter-relationship between belief, attitude and action purpose. Additionally, he indicated that, Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) are both crucial elements in describing individual users' adoption intentions and actual usage in Technology Acceptance Model. According to Davis (2009), Perceived Usefulness is defined as the degree to which one believes that using a specific technology enhances one's job outcome. Whereas, PEOU describes the degree to which a person believes that applying a certain technology is free of effort. "The Technology Acceptance Model has been extensively tested and validated and is a widely accepted model, which can be extended or modified using other

theories/constructs" (Masinge, 2010). According to researchers of Information systems, there is common agreement that a person's acceptance of new technologies is predictable through reliability of TAM (Doll, 1998). The Technology Acceptance Model indicates that various factors affect the user's judgement on how and when they will utilize a new innovation once presented with one (Venkatesh and Bala, 2008). Davis (2009) described that PEOU and PU are essential in deducing the intention towards the use of new innovation by new users. Since the 1980's the TAM model has been applied in studies based on unveiling the decisions of adopting and accessing new innovations by users (Lule, Omwansa & Waema, 2012).

According to Kaasinen (2005), PU is redefined as a perceived value (PV) to the user. In addition, to progress from the intended usage of a mobile service to actual use, the consumer needs to utilize the specific mobile service. Also according to Venkatesh & Davis (2000) one's behavioural decision to use a new innovation is determined by TAM's specific constructs, PU and PEOU. Additionally according to TAM, PU will be affected by PEOU in that, the easier is to use a technology, the more beneficial it can be when all other factors are held equal (Venkatesh, 2000). Technology Acceptance Model and its usage has been the main model for most studies for over a decade now. Some theoretical models such as Rogers' diffusion theory (Bhatti, 2007), Theory of Planned Behaviour (TPB) (Lim & Dubinsky, 2005), and the Theory of Reasoned Action (TRA) (Komiak & Benbasat, 2006) were applied to research on user's acceptance and the usage behavior of upcoming system innovations. TAM has become a parsimonious and powerful model comprising of the antecedents of innovation use via beliefs associated to PU and PEOU systems (Yousafzai, Foxall & Pallister, 2007). Prior study indicated that TAM provides an enhanced variance in innovation use compared to Theory of Reasoned Action, Decomposed TPB and the Theory of Planned Behavior (Lee, Kozar & Larsen, 2003b). Hence, the Theory of TAM was applied in this study to gain an insight of consumer's technology usage in adoption of mobile banking for ease of access to financial credit. TAM was adopted as a suitable model and since it encompassed the specific constructs of Perceived Usefulness and Perceived Ease of Use which determines one's adoption of a new innovation such as Mobile Banking in accessing of financial credit.

4.2 Technology Adoption Life Cycle Model (TALC)

According to Rogers (2003), mobile banking adoption can be examined using the Technology Adoption Lifecycle (TALC) model which describes how new ideas and technologies is widespread in different cultures. According to TALC the stages through which a one adopts an innovation are; awareness of the requirement for a new technology, initial usage of the technology to test it, intension to accept or reject the technology, and continued usage of innovation. Through these stages, diffusion is accomplished. There are five different types of adopters namely: The Innovators are those individuals who intend to be the initial users of the technology are risk-takers and interested in new ideas. Whereas, early adopters represent opinion leaders, acknowledge change opportunities, enjoy leadership roles, and do not require any convincing for them to change. Early majority embrace innovations prior to an average person but need to perceive the technology work before they embrace it. The Late majority are users who are in doubt of new changes and only accept a new technology once it has been thoroughly tested. Lastly, the Laggards are tied by the norms and are really conservative; hence have a fear of new technology (Rogers, 2003). This theory falls within the realm of Mobile Banking Adoption. It describes the crucial stages through which one adopts an innovation such as mobile banking, its acceptance, and eventual usage of the M-banking system to access the financial credit.

4.3 Financial Intermediation Theory

Financial intermediation is defined as the process by which financial market players such as financial institutions and MNOs accumulates funds from net savers which aid in acquisition of financial assets through undertaking transactions and instruments of financial services such as mobile banking. This involves the transfer of financial resources from lenders to and offer financial credit to net borrowers (OECD, 2016). Githinji (2010) noted that establishing of specialized financial commodities such as financial credit requires the functional intervention of the financial intermediary. These essential financial services are established whenever an intermediary finds it possible to sell them for cost effective prices which are entailed to cover all their production costs, such as direct costs, and opportunity costs. Informational disparities between buyers and sellers are particularly evident in most of the financial markets. Majorly, borrowers of credit have a knowhow about their security, moral truthfulness and sincerity much better than the lenders. Contrary, entrepreneurs do acquire inside information concerning own investment or projects that they are seeking to be financed (Brock & Suarez, 2000). The financial intermediation theory posits that financial institutions and MNOs are financial intermediaries that assist in the transmission of financial resources from net savers in the banks to net borrowers of credit through the use of mobile phone devices. Consequently, the theory supports the accessibility of financial credit process that takes place through the mobile hand-held gadgets rather than the traditional, brick and mortar financial institutions.

5. CONCEPTUAL FRAMEWORK

(Mobile banking adoption)

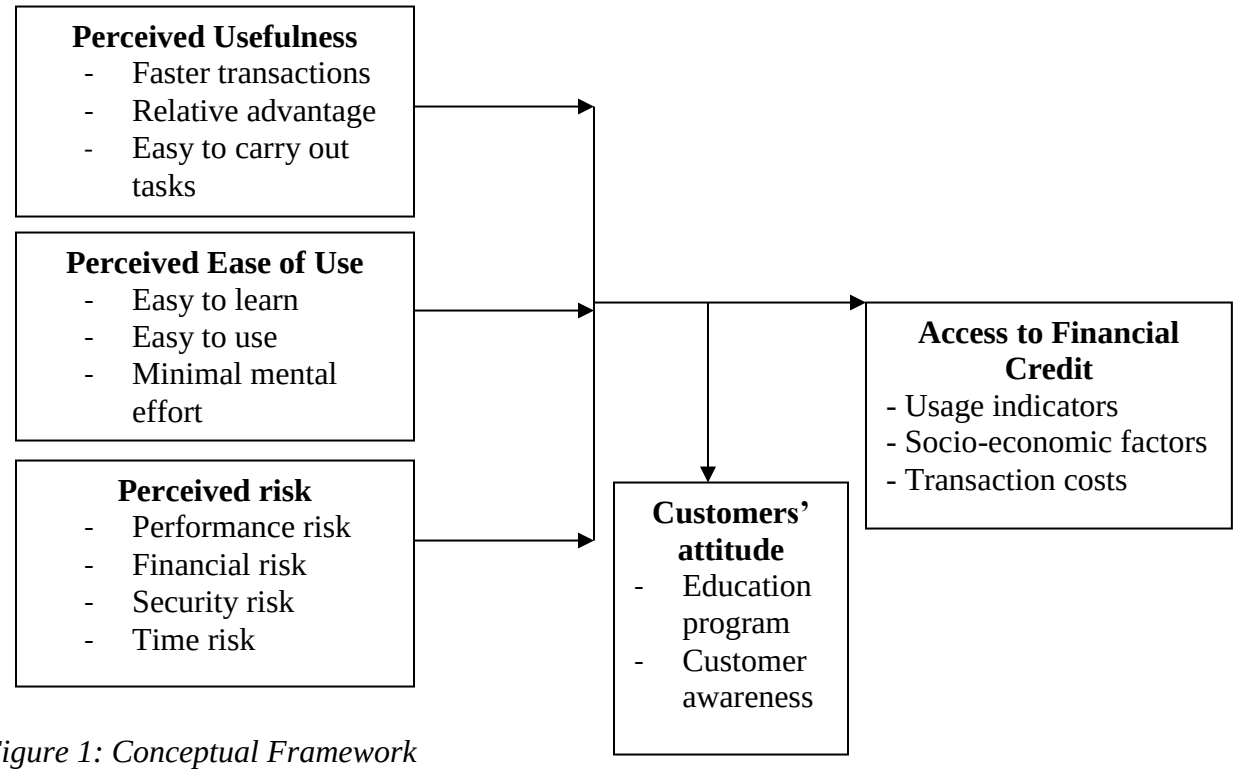

Figure 1: Conceptual Framework

6. RESEARCH METHODOLOGY

Descriptive study design was adopted as a research design in conducting this study. A sample survey was undertaken. The sampling frame consisted of Mobile users who are also holders of bank accounts. The study sample of 138 mobile users was derived from this sample frame. The

sample was drawn by selecting a participant in every fourth household in the five locations in Wote sub-county who were selected through simple random sampling. Data was collected using structured questionnaires composed of open-ended and closed-ended questions. They were constructed based on the four objectives. This is because they are convenient and easy to collect data from respondents and provides the opportunity for anonymity thus promoting high response (Kiess & Bloomquist, 1985). The respondents were allowed at least five working days between 3rd December, 2019 and 7th December, 2019 to fill in the questionnaires after which they were collected. Questionnaires from the field were first checked for completeness. The data from the study was analyzed using both inferential and descriptive statistics. The descriptive statistics such as percentages, frequencies, standard deviation and measures of central tendency was applied. Afterwards, the research findings were presented using frequency tables, charts and bar graphs. The Statistical Package for Social Sciences (SPSS) was utilized in the study to analyze quantitative data. On the other hand, qualitative data was analyzed through segregation into common themes. The Regression analysis was utilized in the study to establish the relationship between the dependent and the independent variables.

7. DATA ANALYSIS RESULTS

The researcher carried out inferential statistics to establish the effect of Mobile banking adoption and financial credit accessibility in Wote sub-county, Makueni County. The findings of Model Summary, ANOVA and Regression Coefficients are indicated in the subsequent sections. The previous section had presented descriptive statistics on the study variables. However, to draw inferences about the population there was need to empirically analyze the data. The following was the study model that was tested.

Table 1: Coefficients of the Study Model

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.656	.164		4.007	.000
Perceived Usefulness (PU)	.218	.020	.409	11.021	.014
Perceived Ease of Use (PEOU)	.160	.024	.242	6.533	.000
Perceived Risk (PR)	.206	.011	.681	18.336	.000

The results indicated that PU had a significance level of 0.014<0.05, PEOU had a significance level of 0.000<0.05, and Perceived Risk had a significance level of 0.000<0.05. This indicates that the study variables were statistically significant in their influence of the dependent variable since their p values were all less than 0.05. Consequently, the study model was converted to the following equation: $Y= 0.656 + 0.218\ X_1 + 0.160\ X_2 + 0.206\ X3.$ To test the effect of the intervening variable the study model was improved as follows: $Y= \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_5 I + \varepsilon.$

Table 2: Coefficients of the study model with the intervening variable

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

(Constant)	1.419	.265		5.357	.000
Perceived Usefulness	.170	.032	.337	5.267	.431
Perceived Ease of Use	.129	.028	.291	4.659	.051
Perceived Risk	.223	.026	.520	8.428	.102
Customers' attitude	.050	.223	.162	3.568	.642

The table shows that after the introduction of the intervening variable (customers' attitude) in the model the independent variables had an insignificant effect towards the dependent variable of the study. This is because their p values were all greater than 0.05. PU of mobile banking adoption had a significance level of 0.431>0.05, PEOU of mobile banking adoption 0.051>0.05, and PR of mobile banking adoption 0.102>0.05. Customers' attitude had a significance level of 0.642>0.05. This led the researcher to drop the intervening variable from the study.

The researcher sought to test the overall significance of the regression model using ANOVA and the results are presented in table 3.

Table 3: ANOVA Test

Model	**Sum of squares**	**df**	**Mean square**	**F**	**Sig.**
Regression	12.115	3	4.038	3.410	0.002
Residual	70.049	123	.569		
Total	82.164	126			

The results in table 3 on ANOVA test showed an F- statistics of 3.410, (significance level = 0.002) which were statistically significant at 0.05(P < 0.05). This shows that the model adopted in the study was significant and that, the variables tested fitted well in the model. The researcher sought to establish the goodness of fit of the study's regression analysis model and this is presented in table 4.

Table 4: Goodness of Fit of the Study Model

R	R Square	Adjusted R Square	Std. Error of the Estimate
.898(a)	.807	.801	.10391

From the table above, Adjusted R is 0.801 and this means that there was 80% positive variation in accessibility of financial credit index due to changes in Perceived usefulness, Perceived ease of use and Perceived risk in adoption of mobile banking.

8. CONCLUSION

The study concludes that there is a positive relationship between Perceived Usefulness of Mobile banking and financial credit access. This implies that the more the mobile banking systems are made user friendly and adequate awareness is carried to the masses especially the rural dweller e higher the chances of them accessing of financial credit. There is a positive relationship between Perceived Ease of Use of Mobile banking and financial credit access. The implication of this is that mobile banking should be simple, have an easy to understand interface, and overall interactive in nature to make it convenient in accessing of mobile loans without any complications. The study also concludes that there is a positive relationship between Perceived Risk of Mobile banking and access to financial credit. This implies that a mobile banking system

that is secure and free of transactional errors quality will create confidence and trust in uptake of mobile loans.

Financial credit access through mobile banking is an innovative service has been greatly embraced in the global banking industry. Although mobile credit has not overshadowed traditional forms of credits, most banks have found it necessary to adopt the system to serve their customers effectively by providing credit access easily. Access to credit has its advantages and disadvantages. Mobile credit enhances economic productivity and growth while on the other hand, too much credit may have negative consequences on the stability of economy or cause financial crisis or reduce the living standards due to too much debt. Mobile banking has enabled bank account holders' access bank services, one of them being access to loans with ease. This platform has supported convenience, time independence, and promptness to customers, along with cost savings. With the flexibility brought about by mobile banking that allows customers to deposit, withdraw, check balance and access their account statements via the platform, it enables them to pay for their loans via the service too. Through this service they are notified the payment dates as well as they can check their credit statements and are able to pay them on time to avoid default.

9. RECOMMENDATIONS

The study recommends that since the number of people with access to a mobile hand set is gradually increasing, the financial institutions and Mobile Network Operators should continuously focus on adoption of mobile banking in their operations. In addition, the convergence of mobile phones and financial institutions has revolutionized the banking services/systems. It is recommended by the study for adoption of financial credit services as supported by the bank focused theory which states that commercial banks can derive more benefits from adopting technologies such as mobile credit in the provision of loans and related services to their clients. Mobile credit is anytime banking since customers are able to transact anytime unlike the traditional normal banking procedures where customers must avail themselves into the banking halls or through the agency banking which is a waste of time. Due to gradual and slow adoption rate of Mobile banking in accessing financial credit there is need to expand market availability in the country. This is based on the fact that due to technological advancements many business entities are switching from the physical branch networks to technology enabled networks due to the benefits associated with them. The effect of mobile credit can be made more significant if sufficient changes are made in view of the adoption and full application of this Mobile banking technology.

Since the population of people who can access mobile phones is on the rise daily, this points more reasons as to the adoption of mobile credit. Further, the flexibility and convenience brought about by access of funds via a mobile phone validates this implementation. Via the mobile platform, one can access credit statements, account statements, account balance and general access to one's account. With this facility made available, an individual is able to check his or her credit status and repay his or her loan in time. This will therefore reduce the number of non-performing loans and hence increase profits made by commercial banks. Further, the size of loans accessible via mobile are small therefore this will improve liquidity ratio of the commercial banks as well as avoid losses that could occur in huge loan default. All this taken into account from the study, recommends a full implementation of mobile credit as well as banks to invest in product innovation especially product extension on mobile credit platforms to ensure that the revenue streams in mobile credit are enhanced. This could be in the form of integrating distribution of insurance using mobile credit platforms to mitigate against low profits and unforeseen losses.

Through flexibility brought about by mobile credit, security risk as an emerging issue might be vital for Mobile Network Operators and financial institutions to look into by improving on trust by provision of secure Mobile banking systems through continuous upgrade of the systems. Enhance security features to protect personal information or provide safeguards for payment transactions. Financial institutions and MNOs should continuously implement new security policies, improve the internal controls to minimize cases of fraud, and enhance data recovery programs. They also need to increase their ability to deter, detect and manage the various risks arising in the Mobile banking systems. Additionally, the use of standalone applications could reduce the financial risks in accessing the financial credit. This study recommends that financial institutions to embark in aggressive customer awareness and education program on use of mobile applications to access mobile financial credit. Though there have been concerted efforts to educate customers on how to access mobile credit, most of the customers have difficulties in accessing the financial credit due to lack of knowhow on how to access the mobile credit. This ensures that customers have an understanding that the financial credit service as well as promote customer confidence. To further enhance customer confidence, this study recommends MNOs and financial institutions to come up with strategies to overcome the mobile banking data access and airtime costs which might also hinder financial credit access.

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