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# Review Article

Nexus between Information and  
Communication Technology,  
Financial Intermediation, and  
Household Investment: A Review

Kiai

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# Nexus between Information and Communication Technology, Financial Intermediation, and Household Investment: A Review

Richard M. Kiai\*

School of Business, Karatina University, Karatina, Kenya.

\*Correspondence: richardkiaim@gmail.com

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## Abstract

Financial inclusion has been recognized as a poverty reduction tool, and many economies have taken it up as a national agenda. To achieve the expected levels of financial inclusion, governments have worked with financial intermediaries to reach the expected target group, the unbanked poor. As per the financial intermediation theory, the role of financial intermediaries is to minimize the information asymmetry in the financial system. To enhance financial inclusion, many countries and financial institutions have embraced information and communication technology (ICT). ICT has been recognized as a tool that has worked greatly toward enhancing sharing of information at a low cost and that has thus helped in improving financial inclusion. Though many countries have achieved high levels of financial inclusion through ICT, the levels of poverty have not declined. It was thus important to establish the relationship between ICT, financial intermediation, and household investment. This study methodology was a review of the literature on financial inclusion, financial intermediation, ICT, and household investment. From this study, it was noted that ICT is helping in financial intermediation and thus more people can access financial services. Unfortunately, the levels of ICT capability among the poor are low, and in that case, the poor are not able to utilize financial services offered through ICT platforms to undertake household investment. This is the reason as to why, despite the high levels of financial inclusion, the poor still remain poor. This study recommends that the government should ensure that the levels of ICT among the populace are high. Financial institutions on the other hand should provide financial services with more user-friendly platforms.

**Keywords:** Financial inclusion; Financial intermediation; Household investment; Information and communication technology.

## 1. INTRODUCTION

Financial inclusion is widely recognized as a critical tool in poverty reduction and realizing inclusive development through household investments (Demirguc-Kunt, Klapper, Singer and Oudheusden, 2015). This has seen world economies taking financial inclusion as a global agenda due to the expected effects of poverty and unemployment reduction. Most countries have been advocating for increasing financial inclusion among its citizens to initiate fight against poverty (Center for Financial Inclusion [CFI], 2013). Both international and local organizations have set aside resources toward improving financial inclusion in various countries across the world (FinAccess, 2009). There has been an increase in funding toward financial inclusion, and in the year 2014, the total funding for financial inclusion was USD 31 million (Soursourian and Dashi, 2015).

The importance of financial inclusion has seen many countries working toward realizing milestones in the Maya Declaration through review of policies, regulations, and regulatory frameworks; consumer protection; agent and mobile banking; financial integrity; and literacy (Alliance for Financial Inclusion [AFI], 2014). Delivery channels like mobile phone money transfer services, agent banking, and microfinance banks have been developed with the aim of increasing financial inclusion. These access channels are cheaper and easier to use and attractive to the poor segment of the society. Financial service providers have also reviewed the Know-Your-Customer requirements that discriminated population alongside demographic characteristics (Aduda and Kalunda, 2012). The major driver for financial inclusion has been the use of mobile technology (Grace, Kenny and Qiang, 2003; Waverman, Meschi and Fuss, 2005). The use of technology has grown and revolutionized overtime after Safaricom Kenya, a telecom company, introduced mobile money in Kenya in

2007 (FinAccess, 2013; FinAccess 2016). This has seen an increase in financial inclusion globally, and over time, the global financial inclusion has changed from 51% in 2011 to 62% in 2014 (Demirguc-Kunt *et al.*, 2015).

The increase in use of mobile phone and information and communication technology (ICT) tools has also been indicated to help in access to finances, as these channels improve access to financial services in areas where traditional financial services are unavailable (Andrianaivo and Kpodar, 2011). Access to credit has been confirmed to play a role in employment creation and poverty reduction. Access to credit has helped businesses to expand in India, more women to expand their business and invest in small-scale enterprises in Mongolia, and in increasing self-employment in Bosnia and Herzegovina (Attanasio *et al.*, 2011).

Because of innovations in the financial sector, there are a number of financial products that are offered via the ICT platform. The usage of these services depends on how one is capable of using ICT technologies (Cohen and Nelson, 2011). In case the level of ICT capability is low among the expected users of the financial products, there may be a challenge in the usage of the same.

## 2. STATEMENT OF THE PROBLEM

Financial inclusion has been confirmed to enhance household investment. People with access to financial services are able to undertake investment and move out of poverty. To achieve broad access to financial services, countries have been advocating for more financial intermediation through ICT. Studies have been carried on the effect of information technology on investment. The purpose of this study is to carry a review of the literature on investment and ICT.

## 3. STUDY OBJECTIVE

The objective of this study is to find out the association between the capability of ICT and investment on financially included society.

## 4. METHODS

This study was a review of the literature relating to financial inclusion, financial intermediation, ICT, and household investment. It first evaluated the theoretical underpinning relating to financial intermediation and financial access. It then looked at other studies on financial access, ICT capability, and household investment.

## 5. THEORETICAL REVIEW

### 5.1. Finance and Inequality Theory

Theory has confirmed that finance plays a critical role in reducing income-inequality gap. Finance and inequality theory holds that how well different households will be able to develop themselves is determined by access to finances. If the poor are able to access finances, they would also be able to develop themselves, and the income inequality in an economy would be reduced. Those with no access of finances are not able to undertake any economic activities to move out of poverty. This makes the income-inequality gap to widen further between those with access to finances and those who cannot access finances (Piketty, 1997, 2000).

This theory indicates that the use of finance reduces the inequality gap. The first direct extensive margin effects are where individuals can use financial services and improve their human and physical capital. It holds that financial system development enables persons who could not be able to access financial products and services to improve their access to physical capital and human capital at the same time. The access to finances allows poor persons to improve their physical and human capital. In addition to finance and inequality theory, two models were advanced by scholars Galor and Zeira (1993) and by Becker and

Tomes (1979, 1986), which indicated that transactions and information costs related to financing of education hampered the poor in financing their education. They predicted that the inequality reduces when poor households borrow money to pay for their children's education.

Galor and Zeira (1993) and Becker and Tomes (1979, 1986) gave models that brought about first perspective of viewing the human capital accumulation between people who could access finance and those who could not. Capital investment by parents helps the children to move from poverty and cross the income-inequality gap. This theory assumes that increase in human capital creates a direct relationship with earning power of children. Thus, children whose parents have higher financial capability are likely to have more abilities than those whose parents have less financial capability. Well-to-do families are also able to access credit for the education of their children when they do not have disposable income compared to the poor. However, under perfect credit markets, even the poor are able to borrow and educate their children. With access to finance then, the rich and the poor are able to accumulate human capital, and in the end, the inequality gap is crossed.

Galor and Zeira (1993) noted that in a situation where the access to credit is first based on the viability of an investment by a household and not initial wealth, the inequality would disappear. This is in an economy where the financing of the project is on first-best credit. In that kind of a market, each person with a viable business would invest in the best investment irrespective of the initial wealth, and in the end, all people will be at the same level of wealth distribution in an economy.

Financial frictions in credit markets also limit who can invest or not. Return to physical capital can be different between the rich and the poor. Initial wealth among the people determines who can be able to access external financing and undertake investment. Noted as the issue of adverse selection and moral hazard, financial frictions can also produce credit restrictions (Aghion and Bolton, 1997; Piketty, 1997). In that case, initial wealth can determine the future distribution of income. The initial wealth thus denies the talented but poor individual from undertaking viable investment, and this lowers the final expectation of economic effectiveness (Piketty, 2000).

The direct margin effects come from the fact that access to finance can help reduce negative shocks. Galor and Zeira (1993) and Becker and Tomes (1979, 1986) models noted that when the market is not developed, there are a lot of negative shocks on the poor, which affects the unbanked and the poor people in the society the most. In support of this, Baland and Robinson (1998) and Jacoby and Skoufias (1997) indicated that there is a relationship between education and the handling of negative income shocks among the poor. When the rich is faced with negative shock financially, the person is able to borrow and thus the education of the children is not affected. On the other hand, poor families use the funds set for the education of their kinds to smoothen income shocks. In that case, they end up withdrawing their kids from school and even sometimes use the kids in supplementing the income by having the children work for a pay. Thus, the inequality gap of the parent with an access to finances will not widen in times of shocks.

Financial development was found to reduce inequality and enhance growth. Financial deficiencies that include transaction and information costs could be restraining the low-income persons who do not have collaterals and credit record. In that case, the poor are not able to access credit from the market. This not only denies the poor a chance to borrow but also affects the efficiency in resource allocation. This limits the flow of capital from among the poor, and even where the poor have an investment that can give high return, they are not able to invest in it (Aghion and Bolton, 1997; Galor and Zeira, 1993). It was viewed that development of the financial system has far-reaching impacts on the poor. It enhances resource allocation and thus the poor can access the resources. Second, it helps in aggregate economic growth in the market, and the poor also benefit from the economic growth as it creates more employment. Finally, it reduces credit limitations, which is a major hindrance to the development of the poor. With these, the inequality among those who had an access to finance and those who did not have an access is minimized. It should be noted that from the perspective of entrepreneurship, where financial market is not well developed and disregard the poor, poor entrepreneurs usually continue being poor as the available resources are lent to rich entrepreneurs with enough collateral instead of lending to people with the most viable and profitable business ideas (Aghion and Bolton, 1997; Bardhan, 2000).

Demirguc-Kunt and Levine (2009) in support of the finance and inequality theory confirmed that finance access has positive impact on individuals. It was noted that the relationship between Gini coefficient and financial development is negative because the financial development helps in reduction of income inequality.

Second, development of the financial system put forth an excessively positive effect on relatively poor. Demirguc-Kunt and Levine (2009) noted that financial development benefits the poor more than the rich. The poor benefits more from the aggregate growth as a result of financial development. Actually, 40% of the benefits from the poor are as a result of reduction in income inequality from the development of the financial market. In conclusion, the scholars agreed that the development of the financial system is associated with alleviation of poverty in the economy, and the number of people living in extreme poverty is reduced.

This theory of finance and inequality has faced some critique. The theory recognizes the importance of finance to bridge the inequality gap. However, the theories do not treat financial market frictions as one of the features that endogenously change the economy. The theory treats finance as the main thing in bridging the inequality gap and ignores other parameters such as the information asymmetry, which is detrimental in shaping future of citizens.

This theory again assumed that an improvement of the financial system where all can access finance was to benefit the rich and the poor in equal measure (Becker and Tomes, 1979, 1986). The theory was not cognizant with the fact that finance can function on the rigorous margin. The development of the financial system was to benefit persons who were already in the financial system, which are the rich individuals and already fully established firms. As a result, the effect of the development of the financial system may have the benefits enjoyed more by the rich individuals, thus widening the inequality gap between the haves and the have-nots (Greenwood and Jovanovic, 1990).

The theory again failed to recognize that the effect of the financial market can be through indirect mechanisms. In this case, the development may see a change in aggregate production and credit allocation. This may see demand for skilled labor increase, which may relatively benefit the rich compared to the poor. Consequently, the rich enjoy the positive effect of the development of the financial system more (Townsend, 1982).

## 5.2. Financial Intermediation Theory

For there to be increased access to finances, there was a need to enhance financial intermediation. The theory of financial intermediation started to emerge in the 1970s from contributions by Rothschild and Stiglitz (1976) and Akerlof (1970) and is based on the principles of imperfect information. In a perfect market, there are a number of assumptions that do not hold in real life. The perfect market assumes that there is no one strong individual who can influence the market in any way by either prices or placement of huge borrowings. The borrowing conditions are the same for all the borrowers, either the rich or the poor, in the market. In a perfect market, there are no discriminative prices, and all the participants have equal competitive advantages. In this form of market, there are no transaction costs of obtaining information for the borrowers, and their information can be accessed freely by all those who want to use it. All the participants in the market have unlimited access to information that can influence the market prices. The information asymmetry arises when only the borrowers who knows the returns from the investment. This results in moral hazard that may minimize the ability of repaying the loan. Due to the informational asymmetry, there are a number of imperfections that lead to form transaction costs.

Assets in the market do face a number of risk characteristics. Financial intermediaries are able to change and transform the risks and overcome market failures in the market. The market asymmetry is a result of the fact that sometimes the borrowers have more information than the lenders. This results in situations where the lender is able to differentiate between the borrowers who have differing credit risks, until after the lender has lent out the money. This results in adverse selection, where the market leaves more risky borrowers in the market due to increase of interest rates. These are the borrowers who are ready to pay the high interest rates and invest in risky projects (Leland and Pyle, 1977).

Leland and Pyle (1977) indicated that financial intermediaries are more of information-sharing alliances in an imperfect market. While banks work together and share information, they are able to enjoy economies of scale. On behalf of the customers, financial intermediaries play the role of monitoring the financial market. This increases the return to scale, and thus, individual investor will leave monitoring to finance intermediaries (Diamond, 1984). Diamond and Dybvig (1983) indicated that financial intermediaries are also considered as an association of depositors that offer persons with assurance against particular shocks that unfavorably influence their liquidity. Leland and Pyle (1977) also viewed financial intermediaries as an association of depositors for the distribution of information among the depositors.

The financial intermediaries play a critical role of information gathering and sharing (Claus and Grimes, 2003; Hirschleifer and Riley, 1979; Leland and Pyle, 1977). The challenge with imperfect information is the fact that this information cannot be sold as it is regarded as a public good. The information being a public good, organizations are not ready to commit huge resources individually on the same. Financial institutions play a key role in gathering this critical information at a lower cost while still maintaining information advantage.

As per the financial intermediation modern theory, financial intermediaries are usually active in the market due to the fact that there are market imperfections that restrict depositors and borrowers to trade directly with each other. Again, most of the market imperfections are related to the market information asymmetry where financial intermediation has an upper hand. Financial intermediaries come in and fill the gap where they undertake monitoring of borrowers on behalf of the depositors who may not have the capacity to do the same. Ultimately, financial intermediaries end up having more advantage in terms of information compared to the depositors and the investors (Claus and Grimes, 2003).

The final approach on financial intermediaries was anchored on the technique of rules of the monetary development, of financing, and saving of the economy. Merton (1995) and Guttentag and Lindsay (1968) developed this approach. The technique recognizes that rules influence the liquidity and solvency of intermediaries. It was again noted that the rules regarding capital in the intermediaries influence the health and the ability of refinancing and the debt recovery techniques. The financial intermediary was again due the need of savings in the economy, financing in the economy, and money production in the economy (Fama, 1980; Guttentag and Lindsay, 1968; Merton, 1995). The scholars held that liquidity and solvency in the financial institutions are affected by regulation in the finance.

The advent of technologies in the financial system has seen an increase in financial intermediation. With agency banking and mobile money, citizens are able to access financial services at their convenience. This has reduced transaction costs to the citizens and to financial intermediaries. The use of the technology in the financial system has also seen a lot of the services left to the consumers of the products to serve themselves. With differences in ICT capability, this has seen some of the potential customers stay aback (Cohen and Nelson, 2011). ICT has also been found to enhance networking and globalization and promoting economic efficiency and productivity. ICT has also enhanced the sharing of information, and since information is a public good, this has improved on openness. OECD (2000) noted that the introduction of the Internet has far much improved the utilization and productivity of ICT, especially on information sharing. The open wide network where cost of access is low has helped many people access information freely.

Due to ICT, financial markets have exploded, and there is a reduction in transaction costs in the financial systems. The management of information in the financial market has greatly improved due to the ICT and Internet. This has also seen financial markets become more and more effective and efficient (Wilhelm, 2001). The Internet and mobile communication technologies apart from offering distribution channels also help in creating and tailoring products at a cheaper cost. They also enable in stratifying the customers leading to personalization of information, pricing services, and more effective way of monitoring credit.

ICT has been confirmed to increase information sharing between players in the market. The costs of sharing the information have tremendously gone down as the time taken to share the information is also low (Muto and Yamano, 2009). Due to the easy availability of information to most of the people, this has also reduced the information asymmetry in the economy (Aminuzzaman *et al.*, 2003).

There have been a number of critiques on this theory. To start with, this theory assumed that there must be an intermediary for there to be investment. However, as per the Arrow and Debreu model, during resource allocation, households and the firms interact in the market for investment purposes. With this, there is no role that is played by financial intermediaries. At the same time, with perfect markets, there is no need of financial intermediaries as the allocation of resources is Pareto efficient. In that case, this theory of financial intermediaries does not hold.

In the view of Modigliani–Miller theorem, it was noted that financial structure is irrelevant and persons do build portfolio which would have been developed by intermediary, and as a result, the financial intermediaries are found to create no value (Fama, 1980). For the financial intermediation to take place, big amount of financial instruments are required for it to hold apart from exceptional cases. This is not the case though in the developing market, yet financial intermediaries play a role.

### 5.3. ICT Capability and Investment

The objective of adopting technology is to improve the performance of the organizations or life of an individual (Narayan, 2005). Michael (2013) noted that if there is to be a development by use of the technology, there is a need to have technology that recognizes the economic boundaries and limitations of the poor people (Narayan, 2005).

On the interaction between financial inclusion and technology, many studies have been undertaken. Hashim (2007) studied ICT adoption by owners of Small and Medium Enterprises (SMEs) in Malaysia. His study evaluated the (ICT) skills, usage, and acceptance, especially in finance-related matters. The sample size of the study was 383 SME owners, where a survey instrument developed from the constructs used in the diffusion of innovation theory was used. The results from the study indicated low levels of ICT skills and low usage of ICT among the SME owners. The low levels of ICT skills made it impossible for the SME owners in Malaysia to take advantage of ICT. The results were similar to a study by Indian Banks' Association (2007), which noted low levels of ICT and usage of the same. To enhance the technology adoption, the studies recommended capacity building among the citizens.

The availability of ICT does not mean there will be usage of the same. The access depends on other factors such as poverty levels, prices of the devices, and telecommunications fees. When poverty levels are high, both the telecommunication cost and prices of devices are high, thus the access to ICT will be limited (West, 2015). Since the poor don't have disposable financial resources, it becomes difficult for them to procure ICT devices or pay for the telecommunication fees. It was indicated thus that income levels have a great bearing toward access to the Internet, with the lowest access to the Internet found in countries with low per capita income. West (2015) further argued that for the poor to gain advantage of the technology revolution, they have to utilize free or cheap ICT products. This may not hold for a longer time as the telecommunication costs keep on changing, and in the current times, the prices have really gone down.

Gigler (2011) designed a different assessment structure that applied Sen's ability technique to the study of ICTs with the aim of placing peoples' well-being instead of technology in the heart of the study. This study focused on empirical evidence in Bolivia as witnessed in rural communities on how they used ICTs. From the study, it was noted that it is not just the access to ICTs, but it all depends on how the ICTs help in enhancing information capabilities, and how the informational capabilities influence political, social, economic, and cultural dimensions. Unfortunately, this study didn't indicate the sample size.

There are a number of challenges that were identified by the Center for Financial Inclusion (2013) that hamper ICT-enabled financial inclusion getting to the anticipated levels, and this results in low levels of adoption. One of the challenges noted by this study was fear of technology by the prospective customers. The other challenges also noted were gaps between access and use, lack of client education related to both financial and technological innovation, and lack of integration. This study established that there was a big gap between those who could have physical access to technology and those who actually used the technology. It was apparent that the financial habits and usage of technology by the rich are not applicable to the poor. However, the study didn't give any recommendation on what should be done on the usage of technology between the rich and the poor.

Despite the progress in financial services that are formal in nature, access to these services through technology is still low. Omwansa and Waema (2014) noted that access to financial services through innovated channels that are not friendly to the poor is a great challenge to broad access. The scholars found that poor people need financial tools that are appropriate, affordable, quick, flexible, and convenient. Mobile money banking and agent banking did not provide the best avenue to the poor to access financial services. Unfortunately, this part of the business for meeting the needs of this segment of the market is not well developed to attract more big players to actively participate in it. The study never gave a recommendation of what should be done.

Ng'ang'a and Mwachofi (2013) studied the means of approaching and enhancing the adoption and uptake of mobile and agency banking technologies and their diffusion in Kenya. This study was critical as the both have key roles in enhancing financial inclusion. This study used a comparative survey data that were collected from SMEs and bank agents from Karatina and Likuyani districts, which are both rural based. The surveys evaluated the views of bank agents and their customers and tried to find out the usage of bank agency from both the agents and the customers and whether there was effect from both. This study found

that despite advocacy on bank agents and proliferation of bank agents across the two towns, only a few people were using the agents. The paper recommended that there should be intervention that will address all the factors that inhibit full usage of the mobile money and agency banking in Kenya. This study was concentrated on two districts and thus could not be used as representative of the country.

Wambua and Datche (2013) studied Equity Bank in Mombasa County, with the objective of examining the innovative factors that influence financial inclusion. The study was specifically evaluating the perceived risk on innovated channels and innovated delivery channels. The study employed the descriptive survey research design where qualitative and quantitative approaches were used. The study targeted 20,585 Equity Bank customers operating in five branches within Mombasa County. Descriptive statistics and correlation analysis were used to analyze the data, and the findings were presented with graphs, frequency distributions, and pie charts. The research concluded that there was underutilization of the innovated channels, and with banks launching new innovated channels such as e-banking, agency banking, and mobile banking, they are still experiencing an influx of lengthy queues in their banking halls. The study was on customers from one bank; however, many banks were offering agency banking in the same region.

Mokaya (2012) studied adoption of ICT by small enterprises in Thika Municipality, Kenya. The study revealed that most people use basic communication tools such as cell phone where 75% used text and voice while 34.6% used the Internet. It was also noted that most small enterprises operate on hand-to-mouth financial existence and thus have a weak financial capacity. From the results, there was a statistically significant association on financial capability and ICT adoption with a  $\chi^2$  value of 7.890 at the significance level of 0.049. It was noted that the poor consider the cost of using ICT to be very high, which impacts negatively on adoption. Communication infrastructure and the level of education and knowledge have significant effect on adoption. Mokaya (2012) concluded that ICT has not been well embraced by the poor in Kenya. He recommended the government of Kenya to come up with appropriate measures that will encourage ICT adoption by the poor, establish a special fund to support ICT adoption, eliminate all taxes on ICT, support training programs to improve the capability of SMEs to embrace ICT, and invest in appropriate communication infrastructure for poor people.

According to West (2015), increase in the Internet access would have a major effect on poverty reduction while strengthening the welfare of the middle class. Extending the Internet access in the developing economies to the same level with the developed countries can raise incomes and living standards by about USD 600 per person a year while lifting about 160 million people out of extreme poverty. The value of the Internet derived from the fact that it enhances investment and job creation for the highly skilled personnel in the developing world. A case study in Rwanda noted that the country established partnerships with leading technology companies to advance technology in the country. The partnerships were able to attract funding into the country, helped in expanding access to the Internet in the country, and advanced knowledge in the society while at the same time providing great benefits to millions of people.

Nelson (2010) also noted that not all ICTs have positive effects. The scholar indicated that technology has been touted to be creating new channels of access to banking services. Cell phones have been found to be replacing and substituting brick-and-mortar bank branches. However, as older people are intimidated by technology, they let the young people access their accounts. The young people on the other hand are quick to grasp the new technologies and master the functionality. Unfortunately, they understand very little in management decisions that the technology can provide. The convenience in access of finances through debit cards, ATMs, and mobile phones presents a challenge to those who want to control spending (Nelson, 2010). This has affected those who want to control spending to save for future investment (Cohen and Nelson, 2011).

The improvement in ICT has made it possible for service providers to come up with differentiated financial products (Center for Financial Inclusion, 2013; Michael, 2013). This has also seen the financial service providers channeling the differentiated financial products through the Internet where the customers access them through ICT platforms. Unfortunately, this is a big challenge for the poor due to their low level of ICT capability and usage. The poor find it difficult to access the services, and as a consequence, they pull back as they are not able to access these finances on their own.

Adopting technology in financial transactions terminates marginalization of the poor from the formal economy by making it cheaper to serve them. This has become possible as an organization can link corporate digital account with customers' digital account for digitally embedded customers. On the other hand, no provider would wish to serve a cash-based customer as the company will be required to develop

physical infrastructure first so as to deal with cash of the customer. Where the poor are thus not able to embrace technology, they cannot benefit from the increasing financial inclusion (Kaguara and Wanjiru, 2009).

From Turk-Stat yearly surveys, Acilar (2011) noted that the computer and Internet usage had significantly increased in Turkey over time. However, differentials on ICT capability still existed between the poor and the rich. The results further indicated that the usage of the computer and Internet was high among the youth as compared to older people. There was a difference in digital usage between different demographic characteristics, younger and older, male and female, education levels, and rural and urban.

Omwansa and Waema (2014) noted that though there has been improvement in formal financial services due to innovated channels, the access is still low. The scholars held that innovative technology that is not convenient to the poor was the main challenge. They further indicated that poor people need financial tools that are appropriate, affordable flexible, quick, and convenient. The best avenue of reaching the poor was indicated to be mobile money network and agent banking network. Nonetheless, the business case for serving this segment of the market has not been well developed to be attractive to main players who can join the market and be actively involved.

Kaguara and Wanjiru (2009) further noted that physical cash again has a disadvantage as the providers get to know very little about the customers. Its reasons include the fact that physical cash transaction leaves no record at all. Without this kind of record, service providers are not able to know how the client manages his finances between repaying his loan obligations and family financial obligations. This is the case for the poor, and this information asymmetry forces financial institutions to put both low-risk and high-risk customers in the same risk portfolio. With digital transactions, it is possible to identify customers who pay their transactions promptly and may be able to be given less costly loans. This encourages investment that may not be the case for the poor who don't take up digital money. It is thus important to connect poor people with a digital financial system since this solves cost barriers in reaching poor people and reduces substantial cost out of the system. This also encourages more players to engage themselves in more robust commercial activities to serve the poor.

## 6. CONCLUSIONS AND RECOMMENDATIONS

This study noted that ICT plays a critical role in household investment. People who had higher levels of ICT capability are able to utilize ICT and take advantage of opportunities provided by ICT for their economic benefits. The study also concludes that the level of ICT capability in low-income countries is albeit low. This means that the people in these countries may not benefit from the opportunities provided by ICT.

From the findings of this study, it is highly recommended that the government and other players should enhance ICT capability of the people and especially the poor. Enhancing ICT capability stems from the fact that many financial institutions are automating their services. In order to improve access, the study recommends that financial service providers should ensure services offered through ICT platform are user-friendly technologies and are in a language that can be understood easily. This study recommends showing people the value of diverse digital content that can encourage consumers to expand the usage of basic digital services that will propel the usage of digital to other areas. This has worked in India where instructional classes train adults how to use the Internet (West, 2015). With the increase in the level of ICT capability, the youth will be able to use ICT to access formal financial services and make informed decisions. The youth will be in a position to utilize formal financial services for investment purposes, making unemployment and poverty levels to go down. If the level of ICT does not improve, the citizens will not be able to utilize financial inclusion for own economic benefits, and they may ever remain poor.

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