



## The Nexus between Social Capital and Household Investment among Financially Included Youth in Kenya

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### **Abstract**

Financial inclusion is a poverty reduction tool and many economies have taken it up as a national agenda. To meet the expected levels of financial inclusion, governments have worked with financial intermediaries to reach the expected target group; the unbanked poor. As per financial intermediation theory, the role of financial intermediaries is to reduce information asymmetry in the financial system. To enhance financial inclusion, many countries and financial institutions have embraced Information Communication Technology (ICT). ICT is recognized as a tool that has worked greatly towards enhancing sharing of information at a low-cost and thus helped in improving financial inclusion. Though many countries have achieved high levels of financial inclusion through ICT, the levels of poverty have not changed. The purpose of this study was to find out the relationship between ICT, financial intermediation, and household investment. Study methodology was a review of the literature on financial inclusion, financial intermediation, ICT and household investment. The study 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 is low, and in that case, the poor are not able to use 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 remains poor. This study recommends that the government make sure that the levels of ICT among the populace is high. Financial institutions should provide financial services with more user-friendly ICT platforms.

## **Background**

Financial inclusion is widely recognized as a critical tool in poverty reduction and achieving inclusive growth through household investments (Demirguc-Kunt, Klapper, Singer & 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 advocated for increasing financial inclusion among its citizens due to this (Centre for Financial Inclusion [CFI], 2014). Organizations both international and local have set aside resources towards improving financial inclusion in the various countries across the world (FinAccess, 2009). Soursourian and Dashi (2015) noted that the funding towards financial inclusion has increased over time. This funding was estimated to be 31 billion dollars as at the close the year 2014.

Countries and especially those who are members of Alliance of Financial Inclusion have made significant strides towards achieving the targets of Maya declaration by reviewing financial regulations and undertaking several innovations. Specifically, this includes review of regulatory frameworks, policies on mobile financial services, agent banking, consumer protection, financial literacy and financial integrity (AFI, 2014). To enhance financial Inclusion, financial institutions have developed delivery channels like mobile phone money transfer services, microfinance banks, and agent banking. 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 along demographic characteristics (Aduda & Kalunda 2012). The major driver for financial inclusion has been mobile technology (Grace, Kenny & Qiang, 2003; Waverman, Meschi & Fuss, 2005). The use of technology has grown and revolutionized over time after introduction of mobile money in Kenya in 2007 by Safaricom Kenya, a telecom company (Kaffenberger, 2014). 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 the use of mobile phone and 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 & Kpodar, 2011). Access to credit plays a key role in employment creation and poverty reduction. In India, access to credit help in business expansion, more women to expand their business and invest in

small-scale enterprises in Mongolia, increase in self-employment in Bosnia and Herzegovina (Attanasio 2014; Banerjee et al. 2015; Meghir 2014).

Due to innovations in the financial sector, there are several finance products that are offered through ICT platform. The usage of these services depends on how one is capable of using ICT technologies (Cohen & 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.

### **Statement of the Problem**

Financial inclusion enhances 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 information communication technology. Studies on the effect of information technology on investment have been carried. The purpose of this study to carry a review of the literature on investment and information communication technology.

### **Objective of the Study**

To establish the relationship between information communication technology capability and investment on financially included society.

### **Methodology**

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

### **Theoretical review**

#### **Finance and Inequality Theory**

The theory has confirmed that finance plays a critical role in minimizing the inequality gap. Finance and inequality theory holds that access to finances determines how different household will be able to develop themselves economically and the income inequality in an economy is reduced. Those with no access to finances are not able to benefit from economic activities and thus they live in poverty. The income inequality between those who have access to finances and those who don't have to continue to widen (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 initially access the same and improve their human and physical capital. This allows poor persons improve their physical and human capital. In the contribution to finance and inequality theory, two models were advanced by scholars Galor and Zeira (1993) and also by Becker and Tomes (1979, 1986) which indicated that transactions and information costs related to the financing of education made poor people unable to finance their education. In their model, they predicted that the inequality reduces when poor households borrow for payment of education for their children.

Galor and Zeira (1993) and Becker and Tomes (1979, 1986) gave models which brought about the first perspective of viewing the human capital accumulation between those with access to finance and those who don't have. Investment in capital by parents creates the ability of the children moving from poverty and crossing the income inequality gap. This theory assumes that increase in human capital creates a direct relationship with earning power of children. Thus, children with parents with higher financial capability parents are likely to have bigger abilities than children where parents are of 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, 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 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 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 determine who can be able to access external financing and undertake investment. It was noted the issue of adverse selection and moral hazard and can produce credit restrictions

(Aghion & 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 is a lot of negative shocks on the poor and it affects most the unbanked and the poor people in the society. 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 kids to smoothen income shocks. In that case, they end up withdrawing their kids from school and even sometimes they use the kids in supplementing the income by having the children work for a pay. Thus, the inequality gap of the parent with 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 collateral and credit record. In that case, the poor are not able to access credit from the market. Not only does deny the poor a chance to borrow, but this also affects the efficiency in resource allocation. This limits the flow of capital from the among the poor and even where the poor have an investment which can give a high return, they are not able to invest in it (Aghion & Bolton, 1997; Galor & 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. Secondly, 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 between those who have and those who do not have is minimized. It should be noted that from entrepreneurship perspective, 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 & Bolton, 1997; Bardhan, 2000).

Demirguc-Kunt and Levine (2009) in support of the finance and inequality theory confirmed that finance access has a 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. Secondly, development of 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 is as a result of a reduction of income inequality from the development of the financial market. In conclusion, the scholars agreed that development of the financial system is associated with alleviation of poverty in the economy and it is associated with the reduction of people living below the poverty line.

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 information asymmetry, which is detrimental in shaping future of citizens.

This theory again assumed that improvement of the financial system where all can access finance was to benefit the rich and the poor in equal measure (Becker & Tomes 1979, 1986). The theory was not cognizant of the fact that that finance can function on the rigorous margin. Development of financial system was to benefit persons who were already in the financial system, which is 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 and thus widening the inequality gap between the haves and the have-nots (Greenwood & 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. As a result, the rich enjoy the positive effect of the development of the financial system more (Townsend, 1982).

### **Financial Intermediation Theory**

For there to be increased access to finances, there was the need to enhance financial intermediation. The theory of financial intermediation began to emerge during the 1970s with the seminal contributions of 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 in real life they do not hold. The perfect market assumes that there is no one strong individual who can influence the market in any way by either through prices, placement of huge borrowings. The borrowing conditions are the same for all borrowers in the market either the rich or the poor. In a perfect market, there are no discriminating prices, all the participants have equal competitive advantages. In this form of market, there is no transaction cost of obtaining information for the borrowers, their information can be accessed freely by all those who want to use the information. All the participants in the market have unlimited access to information that can influence the market prices. Information asymmetry arises when only the borrowers who know the returns from the investment. This results to the moral hazard that may minimize the ability to repay the loan. Due to informational asymmetry, there are a number of imperfections that leads to forms of transaction costs.

Financial 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 as result of the fact that sometimes, the borrowers have more information than the lenders. This results in situations where the lender is not in a position to get the difference between 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 an increase in interest rates. These are the borrowers who are ready to pay the high-interest rates and invest in risky projects (Leland & Pyle, 1977).

Financial intermediaries are considered as information sharing coalitions in an imperfect market (Leland & Pyle, 1977). The banks can work together, share information and achieve economies of scale. They then undertake delegated roles of monitoring the financial markets on behalf of the savers. This increases the return to scale and thus, the 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 distribution of information among the depositors.

The financial intermediaries play a critical role in information gathering and sharing (Claus & Grimes, 2003; Hirschleifer & Riley, 1979; Leland & Pyle; 1977). The challenge with imperfect information is the fact that this information cannot be sold as it is regarded as public good. Thus, not many organizations that are willing to invest heavily in resources that will be used publicly. Banks are thus obliged to get information at a lower cost which can be shared by other intermediaries without losing information advantage.

As per 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 market information asymmetry where financial intermediation have 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 so. In the long run, financial intermediaries end up having more advantage in terms of information compared to the depositors and the investors (Claus & 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 to refinance and the debt recovery techniques. The financial intermediaries were again due to the need of savings in the economy, financing in the economy and money production in the economy (Guttentag & Lindsay, 1968; Fama, 1980; Merton, 1995). Regulation in the finance market affects solvency and liquidity with the financial institution.

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 potential customers stay aback (Cohen & Nelson, 2011). ICT has also been found to enhance networking and globalization, 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 internet has far much improved the utilization and productivity of ICT, especially on information sharing. The open wide network where the 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 ICT and the 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, they 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 (Haukioja & Hahl, 2005)

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

There have been a number of critiques of this theory. To start with, this theory assumed that, there must be an intermediary for there to be an investment. However, as per Arrow and Debreu model, during resource allocation, households and the firms interact in the market for markets 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 build a portfolio that would have been developed by an 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 is 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.

### **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 an improvement in the use of technology, there is 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 Information Communication Technology (ICT) adoption among Small and Medium Enterprises (SMEs) owners in Malaysia. This study examined the degree of Information Communication Technology (ICT) skills, usage, and acceptance among owners of SMEs in Malaysia and especially in finance related matters. The study included 383 SME owners using a survey instrument developed from the constructs used in the diffusion of innovation theory. Study findings showed that the level of ICT skills possessed by SME owners in Malaysia was poor and their use of ICT was low. This made it difficult for poor Malaysian to utilize ICT for economic advantage. This was in support findings by Indian Banks' Association (2007) which had similar findings. The study recommended capacity building in order to enhance technology adoption.

Availability of ICT does not always translate to usage. West (2015) observed that poverty, expensive devices, and high telecommunications fees hinder access to information communication technology. He indicated that lack of disposable financial resources makes it difficult for the poor to purchase devices or gain access to digital services. Income levels were indicated as a key barrier to internet access, and internet penetration levels are often the lowest in countries with the lowest GDP per capita. They argued that unless these poor individuals utilize free or cheap products, they could not be able to gain the benefits of the technology revolution. 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 which applied Sen's ability technique to the study of ICTs in 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 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.

Center for Financial Inclusion (2013) indicated that there are challenges that hinder ICT enabled financial inclusion reaching its anticipated levels and thus the adoption levels are low. This study indicated that fear of technology by prospective customers, lack of client education, related to both financial and technological innovation, gaps between access and use, lack of integration among others inhibit new applications of technology. The research found a big gap between the persons who could access physical technology and those who use the technology. Most affected are the less educated or less experienced with technology and do not know how to use the technologies. The study concluded that the financial habits and use of technology by the middle class are inapplicable to the poor in the society. 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. According to Omwansa and Waema (2014), one of the main challenges is the access to the services is through innovative technologies that are not convenient to the poor people. They noted that poor need financial tools that are appropriate, flexible, convenient, quick and affordable. It was noted that agent network and mobile money channels provided the best avenue for reaching the very poor. However, the business case for serving this segment of the market has not been well-developed to attract and make the main players to be actively involved. The study never gave a recommendation of what should be done.

Ng'ang'a and Mwachofi (2013) studied the means of approaching the enhancing the adoption and uptake of Mobile and Agency Banking technologies adoption and their diffusion in Kenya. The study was critical as the two have a key role in enhancing financial inclusion. This study used a comparative survey data, which was collected from SMEs and Banks 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 both from the agents and the customers and whether there was an 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 an intervention that will address all the factors that inhibit full usage of the mobile money and agency banking in Kenya. The study was concentrated on two districts and thus could not be used as representative of the country.

Wambua and Datche (2013) did a study of Equity Bank in Mombasa County, with the objective of analyzing the innovative factors that affect 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 with both quantitative and qualitative approaches where it targeted 20,585 Equity Bank customers operating in 5 branches within Mombasa County. Descriptive statistics and correlation analysis were used to analyze the data, the presentation of findings was by use of graphs, frequency distributions, and pie charts. The research concluded that the innovated channels of distribution are generally underutilized, the banks that roll out new channels of distribution such as E-Banking, Agency banking, and M-banking are still experiencing influx 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 the adoption of information and communication technology 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% internet. It was also noted that most small enterprises operate on the hand-to-mouth financial existence and thus have a weak financial capacity. The results indicated a statistically significant relationship between financial capacity and ICT adoption with a chi-square value of 7.890 at 0.049 significance level. It noted poor perceive the cost of ICT to be very high and this has a negative effect on adoption. Communication infrastructure, the level of education and knowledge has a significant effect on adoption. Mokaya (2012) concluded that ICT has not been well embraced by poor in Kenya. He recommended that the government of Kenya should develop an appropriate program to encourage ICT adoption by poor, eliminate all taxes on ICT, and establish a special fund to support ICT adoption; support training programs to develop the capacity of SMEs to embrace ICT; invest in appropriate communication infrastructure for poor people.

According to West (2015), an increase in internet access would have a major impact on poverty alleviation and strengthen the middle class. Extending the Internet access in

developing economies to the same level with developed countries can raise incomes and living standards and 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 leads to increased investment and creates jobs for high-skilled workers in the developing world. A case study in Rwanda noted that the country formed partnerships with leading technology companies to advance technology in the country. The collaborations have brought valuable new funding into the country, broadened Internet access across the country, helped advance the knowledge society, and provided benefits for millions of people.

Nelson (2010) also noted that not all ICT has 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 banks branches. However, the older people are intimidated by technology and this has seen a situation whereby older people are allowing access to their accounts to the young people. 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. New convenience in access of finances through debit cards, ATMS, and mobile phones present a challenge to those who want to control spending (Nelson 2010). This has affected those who would control spending, do saving for future investment (Cohen & Nelson, 2011)

The advancement in technology has enabled the financial service providers to differentiate financial products (Center for Financial Inclusion, 2013; Michael, 2013). These products are channeled through the internet and sometimes, the customers are expected to access them online. For the poor people, this becomes a big challenge as their level of technology usage is very low. Due to this deficiency, the poor tend to stay aback as they are not in a position to access the products on their own.

Adopting technology in financial transactions terminates marginalization of the poor from the formal economy by making it cheaper to serve them. A company can transact with a digitally embedded customer simply by linking their corporate digital account to the customer's digital account. On the other hand, no provider would wish to serve a cash-based customer as the company must first establish the physical infrastructure to interface with their cash. Where the poor are thus not able to embrace technology, they

are not able to take advantage of the increasing financial inclusion (Kaguara & Wanjiru, 2015).

Acilar (2011) noted that according to the results of Turk-Stat yearly surveys, computer and Internet usage has significantly increased in Turkey over time. However, differentials on ICT capability still existed between poor and rich. The results further revealed that computer and the Internet usage rate among young generation is considerably higher than that among elders. 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 despite the progress in formal financial services in Kenya, access to formal financial services through technology is still low. The study indicated that one of the main challenges is the access to the services is through innovative technologies that are not convenient to the poor people. They noted that poor need financial tools that are appropriate, flexible, convenient, quick and affordable. It was noted that agent network and mobile money channels provided the best avenue for reaching the very poor. However, the business case for serving this segment of the market has not been well-developed to attract and make the main players to be actively involved.

Kaguara and Wanjiru (2015) further noted that physical cash again has a disadvantage as the providers get to know very little about the customers. Reason being the fact that physical cash transaction leaves no record at all. Without this kind of record, service providers are able to know whether a client regularly repays his loans to the local moneylender and sends money to his family at the end of each month. This is not the case for the poor and this information asymmetry forces service provider to lump low-risk and high-risk customers into the same risk pool. With digital transactions, it is possible to identify customers who pay their transactions promptly and they may be able to be given less costly loans. This encourages investment which may not be the case for the poor who don't take up digital money. It is thus important to connect poor people to a digital financial system since this solves cost barriers to reaching poor people and reduce substantial cost out of the system. This also paves the way for more robust commercial efforts to serve the poor.

## **Conclusion and recommendation**

This study noted that information communication technology is playing a critical role in household investment. People who had higher levels of information communication technology capability are able to utilize ICT and take advantage of opportunities provided by information communication technology for their economic benefits. The study also concludes that the level of information communication technology capability in low-income countries is albeit low. This means that the people in these countries may not benefit from the opportunities provided by information communication technology. This study recommends that government and other stakeholders to improve ICT capability of the citizens. This is the fact that many financial institutions are automating their services. In order to improve access, the study recommends that financial service providers ensures services offered through ICT platform are in a simple to use technologies and in easy to understand language. This study recommends showing people the value of diverse digital content and having consumers expand their use of basic services that can propel digital activities in a variety of other areas. This has worked in India where instructional classes train adults how to use the Internet (West, 2015). With an 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. In the end, unemployment and poverty levels will go down. If the level of ICT is not improved, the citizens may not be able to take advantage of financial inclusion and they may ever remain poor.

## **References**

- Acilar, A. 2011. Exploring the aspects of digital divide in a developing country. *Issues in Informing Science and Information Technology*, 8, 231-244
- Aduda, J., & Kalunda, E. 2012. Financial inclusion and financial sector stability with reference to Kenya: A Review of Literature. *Journal of Applied Finance & Banking*, 2(6), 95-120
- Aghion, P. & Bolton, P. 1997. A theory of trickle-down growth and development. *Review of Economic Studies*, 64(2), 151-172
- Akerlof, G. 1970. The market for lemons: Quality uncertainty and the market mechanism. *Quarterly Journal of Economics*, 48, 488-500.
- Alliance for Financial Inclusion [AFI]. 2014. *Putting financial inclusion on the global map: The 2013 Maya Declaration progress report*. Bangkok, Thailand: Wattana

- Aminuzzaman, S., Baldersheim, H., & Jamil, I., 2003. "Talking back! Empowerment and mobile phones in rural Bangladesh: a study of the village phone scheme of Grameen Bank", *Contemporary South Asia*, 12(3), pp. 327-348.
- Andrianaivo, M., & Kpodar, K. 2011. *ICT, Financial inclusion, and growth: Evidence from African countries*. (IMF Working Paper 7). Washington, DC: IMF
- Attanasio, O., Augsburg, B., de Haas, R., Fitzsimons, E. & Harmgart, H. 2011. *Group lending or individual lending? Evidence from a randomized field experiment in Mongolia*. (Working Paper W11/20). London: Institute for Fiscal Studies
- Baland, J. M., & Robinson, J. A. 1998. *A model of child labor*. (Working Paper 9803). California: Department of Economics, University of South California.
- Banerjee, A. V., & Newman, A. F. 1993. Occupational choice and the process of development. *Journal of Political Economy*, 101 (2), 274–298.
- Bardhan, P. 2000. *The nature of institutional impediments to economic development*. In *A Not-So-Dismal Science: a Broader View of Economies and Societies edition*. M Olson, S Kahkonen, 245–268. New York: Oxford University Press
- Becker, G. S., & Tomes, N. 1979. An equilibrium theory of the distribution of income and intergenerational mobility. *Journal of Political Economics*, 87(6), 1153–89.
- Becker, G. S., & Tomes, N. 1986. Human capital and the rise and fall of families. *Journal of Labor Economics*, 4(3), 1-39.
- Centre for Financial Inclusion [CFI]. 2013. *Roadmap to financial inclusion*. Technology-Enabled Business Models.
- Claus, I. & Grimes, A. 2003. *Asymmetric information, financial intermediation and the monetary transmission mechanism: A critical review*. New Zealand Treasury Working Paper
- Cohen, M. & Nelson, C. 2011. *Financial literacy: A step for clients towards financial inclusion*. 2011 Global Microcredit Summit.
- Demirguc-Kunt, A., Klapper, L., Singer, D., & Oudheusden, P. V (2015). *The Global Findex Database 2014: Measuring financial inclusion around the world*. (Policy Research Working Paper 7255). Washington, DC.: World Bank.
- Demirguc-Kunt, A., & Levine, R. 2009. *Finance and inequality: Theory and evidence* (Research Working Paper 15275). Cambridge: National Bureau of Economic.

- Diamond, D. W. 1984. Financial intermediation and delegated monitoring. *Review of Economic Studies*, 51, 393-414.
- Diamond, D. W., & Dybvig, P. H. 1983. Bank runs, deposit insurance, and liquidity. *Journal of Political Economy*, 91, 40-49.
- Fama, E.F. 1980. Banking in the theory of finance. *Journal of Monetary Economic*, 10, 10-19.
- FinAccess. 2009. *National survey results. Dynamics of Kenya's changing landscape*. Nairobi: Central Bank of Kenya and Financial Sector Deepening.
- FinAccess. 2013. *National Survey. Profiling developments in financial access and usage in Kenya*. Nairobi: Central Bank of Kenya and Financial Sector Deepening.
- FinAccess. 2016. *The 2016 FinAccess household survey*. Nairobi: Central Bank of Kenya and Financial Sector Deepening.
- Galor, O., & Zeira, J. 1993. Income distribution and macroeconomics. *Review of Economic Studies*, 60 (1), 35-52.
- Gigler, B. S. 2011. *Informational Capabilities- The Missing Link for the Impact of ICT on development*. (E-Transform Knowledge Platform Working Paper). Washington DC: World Bank
- Grace, J., Kenny, C., & Qiang, C. Z. 2003. *Information and communication technologies and broad-based development: A partial review of the evidence*. (Working Paper, Technical Report 12). Washington DC: World Bank.
- Greenwood, J., & Jovanovic, B. 1990. Financial development, growth, and the distribution of income. *Journal of Politics and Economics*, 98(5), 1076-107.
- Guttentag, J.M., & Lindsay, R. 1968. The uniqueness of commercial banks. *Journal of Political Economy* 71, 991-1014.
- Hashim, J. 2007. Information Communication Technology (ICT) adoption among SME owners in Malaysia. *International Journal of Business Information*, 2(2), 221-239.
- Hirschleifer, J., & Riley, J. G. 1979. The analytics of uncertainty and information: An expository survey. *Journal of Economic Literature* 17, 1375- 1421.
- Indian Banks' Association. 2007. *Approach paper on IT-enabled financial inclusion: How to leverage technology for broad-basing financial inclusion initiatives*. (Policy Working Paper). Cuffe Parade: Department of Social Banking.

- Jacoby, H. G., & Skoufias, E. 1997. Risk, financial markets, and human capital in a developing country. *Revised Economies Studies*, 64(3), 311–335.
- Kaffenberger, M. 2014. *Digital pathways to financial inclusion- Kenya Report*. Financial Inclusion Insights Program.
- Kaguara, A., & Wanjiru, M. 2009. *Digital divide: The glaring reality*. Nairobi: University of Nairobi Press.
- Leland, H. E., & Pyle, D. H. (1977). Informational asymmetries, financial structure, and financial intermediation. *The Journal of Finance* 32, 371-387.
- Merton, R.C. (1995). Financial innovation and the management and regulation of financial institutions. *Journal of Banking and Finance* 19, 461-481.
- Michael, T. (2013). Social capital in Bourdieu's, Coleman's and Putnam's theory: Empirical evidence and emergent measurement issues. *Educate Journal*, 13 (2) 2-23.
- Mokaya, S. O. (2012). The adoption of Information and Communication Technology by small enterprises in Thika Municipality, Kenya. *International Journal of Business and Social Science*, 3 (13), 172 -177.
- Muto, M., & Yamano, T., (2009). "The Impact of Mobile Phone Coverage Expansion on Market Participation: Panel Data Evidence from Uganda", World Development, 37(12), pp. 1887-1896.
- Narayan, P. K. (2005). The relationship between saving and investment for Japan. *Japan and the world economy*, 17(3), 293-309.
- Nelson, C., (2010). Financial education for all ages. *Innovations, MIT Press Journal*, 5(2), 69-84.
- Ng'ang'a, S. I., & Mwachofi, M. M. (2013). Technology adoption and the banking agency in rural Kenya. *Journal of Sociological Research*, 4 (1), 249 – 266.
- OECD (2000) A new economy? The changing role of innovation and information technology in growth. OECD. Paris.
- Omwansa, T. K., & Waema, T.M. (2014). *Deepening financial inclusion through collaboration to create innovative and appropriate financial products for the poor*. KBA Centre for Research on Financial Markets and Policy Working Paper Series.
- Piketty, T. (1997). The dynamics of wealth distribution and the interest rate with credit rationing. *Revised Economies Studies*, 64(2), 173–189.

- Piketty, T. (2000). *Theories of persistent inequality and intergenerational mobility*. In Handbook of Income Distribution, Volume 1. Edited by A. B. Atkinson and F Bourguignon, Elsevier Science B. V.
- Rothschild, M., & Stiglitz, J. E. (1976). Equilibrium in competitive insurance markets: An essay on the economics of imperfect information. *Quarterly Journal of Economics*, 95, 629-649.
- Soursourian, M. & Dashi, E. (2015). *Current trends in international funding for financial inclusion*. Washington, D.C: World Bank Group.
- Townsend, R. M. (1982). Optimal multi-period contracts and the gain from enduring relationships under private information. *Journal of Political Economies*, 90(6), 1166-1186.
- Wambua, S. M., & Datche, E. (2013). Innovative factors that affect financial inclusion in the banking industry: A case study of Equity Bank Mombasa County, Kenya. *International Journal of Sciences: Basic and Applied Research*, 12 (1), 37-56.
- Waverman, L., Meschi, M., & Fuss, M. (2005). *The impact of telecoms on economic growth in developing countries in Africa: The impact of mobile phones*. The Vodafone Policy Paper Series, 2,10-23.
- West, D. M. (2015). *Digital Divide: Improving Internet access in the developing world through affordable services and diverse content*. Centre for Technology Innovation at Brookings.
- Wilhelm, W. J, JR. (2001) The Internet and financial market structure. Financial Economic Papers. Working Paper Series 2001-FE-07. Oxford Financial Research Centre.