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Abstract
The issue of access to financial products has been a public policy issue since 2005 when the first FinScope Zambia study was conducted. The 2015 study indicated that 40.7% of adults were financially excluded. This article investigates the influence of mobile money on financial inclusion using urban Kitwe and Kalulushi as case studies. We employ an ethnographic methodology to understand the extent to which mobile money has encouraged the unbanked population to access financial products and services. The findings indicate that mobile money has a positive influence on financial inclusion. It is easier to open accounts with mobile money kiosks than with formal banks. Mobile money services are conveniently located where the unemployed, aged and other segments of the unbanked population are found. They use mobile money services to send and receive money, pay utility bills and purchase airtime. Since mobile money services positively influence financial inclusion in urban settings, we recommend that they should be made widely available in rural areas. Furthermore, there is need to increase financial education and knowledge about mobile money systems and operations across populations in both urban and rural areas.

Keywords:
Mobile money, ethnography, financial inclusion, mobile service providers.

1. Introduction

Financial inclusion has traditionally been associated with the use of banking services offered by the formal financial system. The current interpretation of financial inclusion is diverse. Recent literature discusses the provision of financial services at affordable costs to the disadvantaged and low-income segments of society (Demirgüç-Kunt and Klapper, 2012; World Bank, 2017). This entails the use of basic banking services like deposits, loans, payments, and money transfers. One platform that has helped in the promotion of financial inclusion is mobile money. Mobile devices have become an important tool in promoting financial inclusion for previously unbanked populations in developing countries (Kanobe et al., 2017).

Sub-Saharan African countries have advanced rapidly in the use of mobile phones since the early 2000s. World Bank data revealed in 2012 that mobile phone subscriptions had grown at an annual average rate of 208% in sub-Saharan Africa (World Bank, 2012 cited in Fanta et al., 2016). Zambia experienced a high uptake of mobile phone usage with about 63% of the adult population owning a mobile phone in 2017 (World Bank, 2017). In 2018, there were 11.3 million mobile subscriptions in an estimated population of 16.4 million (CSO, 2018).

The increasing use of mobile phones has created opportunities for the dispersal of digital financial services such as mobile money. Mobile money services have been facilitated by a joint exertion between the mobile phone users and mobile network operators (IGC, 2016; Chikumbi and Siame, 2018). The use of mobile money has largely been driven by convenience, timeliness, accessibility, affordability, and security. The FinScope survey of 2015 shows that Zambia has had a significant increase in the number of financially-included adults from 37.3% in 2009 to 59.3% in 2015 (BoZ, 2016). As the number of mobile service providers in Zambia grew, more financially-excluded families have been reached through the use of mobile money services (Chikumbi and Siame, 2018). However, the penetration of mobile money is still quite low. Opportunities still exist to accommodate more of the financially excluded adults. The IFC reported in 2014 that only 7% of the 4.6 million registered mobile subscribers had active mobile money accounts (World Bank, 2014). By 2017 the *Zambian Business Times* quoting Lazarous Kamanga, Director of Banking and Payment Systems at the Bank of Zambia, stated that 12% of the 12.9 million registered mobile subscribers had active mobile money accounts (*Zambian Business Times*, 2018). The number of mobile money users is still low and requires improvement. This will only be possible if “mobile telecom and mobile money infrastructure are developed” (Fanta et al. 2016: iii).

The positive relationship between mobile money and financial inclusion has been discussed at the national level (FinScope, 2015)[1]. Yet, it is not clear whether this evidence applies to all districts in Zambia. Is it possible to generalise the relationship between mobile money and financial inclusion? This study focuses on the influence of mobile money on financial inclusion in two urban districts of Zambia. The rest of the article is as follows. We define mobile money and financial inclusion and discuss the importance of mobile money services in section two. The third section reviews the literature on mobile money services. The fourth section explains the methodology we have used. The fifth section discusses the findings from the two case studies. We conclude the article with policy recommendations in section six.

2. Mobile money and financial inclusion in Zambia

Digital financial services range from mobile banking, internet banking to mobile money services. Mobile money is defined as a financial transaction made by using a Subscriber Identification Module (SIM)-enabled device such as a cellular phone via a mobile network (Donovan, 2012). Unlike mobile banking which is the transfer of money from a bank account via a mobile network operator, mobile money brings about a physical movement to money by enabling it to flow from one location to another (de Bruijn et al., 2017). Mobile money can be viewed as the provision of a range of financial services via a mobile phone and a mobile network operator.

The poor are thought to be financially-excluded. In this regard, poverty is not limited to the lack of money, food or shelter; it is the lack of access to instruments and means which poor individuals can use to improve their livelihoods. The exclusion from access to formal financial services is a major hindrance to eliminating poverty from society and can potentially slow down economic growth. Demirgüç-Kunt et al. (2008) estimated that more than half of the households in developing countries have no accounts with financial institutions. The main reason is in the difficulties in accessing affordable finance. This does not mean that financially-excluded individuals are not financially active or not knowledgeable about finance. It merely implies that the poor rely more on informal mechanisms to raise funds, save, repay debts and manage risks. However, these informal mechanisms exclude them from a wider scope of financial services such as bank credit, insurance, money transfer and brokerage. The enhancement in product options available to financial service providers worldwide has been as a result of an increase in the number of mobile money channels.

DeAssis (2016) defines financial inclusion as “all initiatives that make formal financial services Available, Accessible and Affordable to all segments of the population.” Financial inclusion needs to be inclusive and sustainable in order for it to have a bearing on all parties involved and the economy as a whole. Specific consideration should be given to individuals who traditionally are not included in the formal financial sector. This is usually because of such factors as the level of income, gender, geographic location, risk profile, literacy levels or the type of activity they engage in.

The rise in mobile money services gives millions of people an opportunity to access finance and be formally included. A success story is the Safaricom’s M-PESA experience in East Africa (Jack and Suri, 2011, Hughes and Lonie, 2007; Ngambi, 2016). The M-PESA model is premised on “building the payment ‘rails’ on which a broader set of financial services can ride,” wrote the authors of one report (Mas and Radcliffe, 2010). There is evidence from East Africa that the use of mobile money has led to an increase in the incomes of families and to economic expansion as a whole. For example, in Kenya, a study conducted by Kikulwe et al. (2014) revealed that mobile money usage is associated with significantly higher income groups. Kikulwe et al. (2014) found that the estimated treatment effect of 61.5 thousand Ksh (745 US$) implies an income increase of 40% relative to the mean income of non-users of mobile money.

Zambia was one of the early adopters of mobile money services. The first services were introduced in 2009 (BoZ, 2016). The country has since then seen a number of players come on board the digital financial services platform. These include MTN mobile money, Airtel money, and Zoona. These were spearheaded by the telecommunications companies, the Mobile Network Operators (MNOs). These service providers have been driving inclusive finance by taking advantage of the main ideas behind the demand for consumer goods that are low priced in nature and target the mass market (Ngambi, 2016). The positive strides made have been possible due to developments in technological infrastructure, the interoperability of payments systems and a regulatory framework on mobile money. Consumer interests have been safeguarded by ensuring that mobile money services are safe and secure. This has, in turn, contributed to an increase in the number of players in the digital financial services platform. (BoZ, 2018; Chikumbi and Siame, 2018). These improvements have led to a flourishing environment for digital financial services. The Government through the National Financial Inclusion Strategy (GRZ, 2017) has demonstrated that it is actively committed to the expansion of mobile money services. It has emphasized delivery channels' accessibility. It has promoted "diversity, innovation and customer-centricity of products" (Chikumbi and Siame, 2018: 1).

3. Literature Review

In this section we explore the literature that highlights the link between mobile money and financial inclusion, and shows the importance of mobile money in the socio-economic discourse. We review the literature on mobile banking and mobile money as a tool for financial inclusion.

3.1 Mobile Banking and Mobile Money

Mobile banking and mobile money are terms that may appear to refer to one and the same thing. The two terms are different. Mobile banking, also known as M-banking, allows a user to operate a bank account using their mobile phone. This is as long as the registered mobile phone is linked to their bank account. A bank customer would be able to perform basic operations using his or her mobile phone. The common services accessed through mobile banking are account balance checks, transferring funds, airtime purchases and bill payments.

Mobile money allows users to do similar transactions on a mobile phone.

However, in this case, the focus is on making mobile payments from an account that is not held in a conventional bank account. A mobile money account is held with the service provider where a mobile phone is linked to a pool of cash that has been pre-funded. The account holder is able to engage in transactions similar to m-banking. The only limitation in this case is that the user would not access such banking services as medium-term to long-term loans. To open a mobile money account does not require as much documentation as establishing an account with a conventional bank. The major requirement is that the mobile money account holder must have a registered mobile phone number with the mobile network operator.

Thus, mobile money is a range of financial services that consumers access through mobile phone devices (Donovan, 2012). Mobile banking is the provision of banking services with the aid of mobile devices (Agrawal, 2009). Tiwari et al. (2006) posit that mobile banking is any transaction, involving the transfer of ownership or rights to use goods and services, which is initiated and/or completed by using mobile access to computer-mediated networks with the help of an electronic device. Studies have found that the mobile money facility is targeted at members of the population who are 'unbanked'. These can be of varying educational levels, i.e. the literate, semi-literate and illiterate. These cannot easily access financial services in the formal way (Donovan, 2012; Jack and Suri, 2011). Increasingly, however, even the literate and banked have adopted mobile money services because of convenience.

Mobile money services have proved to be key to inclusive finance and poverty eradication for the underserved and financially excluded individuals. This is because mobile network service providers have proved to be reliable (Donovan, 2012). These do not operate in isolation and must collaborate with agents and consumers. MNOs engage agents to reach the end-users of the product. This is part of their business model. An agent is an appointed dealer who offers mobile money services to customers. Agents capitalise on various factors such as the high number of subscribers that an MNO has, the established technological infrastructure, the airtime channels of distribution and the strong brand affinity (Ngambi, 2016). Agents play a key role in transforming the customers' cash into "electronically stored value and back into cash as and when needed" (Chikumbi and Siame, 2018: 1). The agents benefit from commissions earned, cost saving, accessibility, privacy of users' information and transaction, suitability and convenience (Donovan, 2012) The impact of mobile money services depends on the benefits that accrue to the agents and consumers. The services available to customers include: bill payments, transferring (sending and receiving) money between parties, purchase of airtime, cash out points, store of value (saving money) and transferring money from a bank account (Fanta et al., 2016).

3.2 Mobile money as a tool for financial inclusion

Mobile money has contributed to financial inclusion. M-PESA in Kenya is a success story that can be emulated across the developing world (Donovan, 2012). This platform has extended financial services to the unbanked, thereby improving productivity and at the same time lowering the cost of transactions (Jack and Suri, 2011; Peruta, 2017). Financial inclusion is the provision of financial services to groups that have no access to formal banking services. Demirguc-Kunt and Klapper (2012) see financial inclusion as the absence of price and non-price barriers in the use of financial services. Financial inclusion is achieved when a range of basic financial services that include credit, savings, insurance and payment are provided (Gardeva and Rhyne, 2011). The main goal is to expand access to basic financial services. This will result in economic growth, social and economic empowerment, reduction of poverty and the promotion of a culture of saving among citizens. The mobile money facility breaks the barrier created by traditional banks that excludes the majority of people from accessing financial services.

The determination of financial inclusion has evolved from only considering adults that owned accounts with conventional banks. Today, financial inclusion is a broader measure that includes ownership of accounts held with mobile money providers (Demirguc-Kunt and Klapper, 2012; Demirguc-Kunt et al, 2015). The inclusion of accounts held with mobile money providers is necessitated by mobile money becoming part of the mainstream modes of banking in today's financial system in both developed and developing countries (Aker and Mbiti, 2010; Donovan, 2012). The measure of financial inclusion now cuts across ownership and use of a range of financial products and services in the financial system. Among them are access to credit, ownership of savings accounts, insurance products, receipt of remittances, and other forms of financial transfers (Demirguc-Kunt et al., 2015).

Mbidde (2017) studied the utilisation of mobile money services in rural Uganda. The study found that, although mobile money services were mostly used for airtime purchases, the service was contributing to financial inclusion. Seven in every ten household members often used mobile money service for cash withdrawals and deposits. Further, six in every ten household members used mobile money to settle bills. Sackitey (2018) suggests that, undoubtedly, mobile money contributes to achieving financial inclusion in Ghana. In the SADC region, the use and benefits of mobile money services vary. In most cases, the uses overlap. For example, in "South Africa, Botswana, Malawi, Mauritius, and Mozambique the most common use of mobile money services is the purchase of airtime. At the same time, in South Africa, Botswana, Malawi, Tanzania, Zimbabwe, and Madagascar the service is also used to send and receive cash"

(Fanta et al. 2016: 1-9). In Zambia, however, it is primarily used for local money remittance. Mobile money service is mainly for transactional purposes and serves as an alternative to cash payments (Ngambi, 2016). Instead of paying cash for goods, mobile money can be used to make payments for goods and services. These include subscriptions for cable TV (Multichoice/DSTV Zambia), and electricity and water bills. This can be done via a mobile money account using a cell phone in the comfort of a home and at a convenient time (Dzokoto and Imasiku, 2013).

The World Economic Forum (2018) suggested that mobile money as a tool for financial inclusion has the potential globally to provide access to financial services to two billion financially-excluded adults. Furthermore, about 200 million formal and informal micro, small, and medium-size enterprises make use of mobile money having failed to access financial services from conventional banks in developing economies (Demirguc-Kunt and Klapper, 2015).

The process of financial inclusion is enhanced by mobile money through the provision of financial services that are also provided by conventional banks. The services include checking of account balances, fund transfers, bill payments, loans and encouraging a culture of saving. The low cost of transacting using mobile money enhances the positive impact that mobile money has on financial inclusion. Savings arise from the inexpensive transfer of money and the reduced travel time. Most mobile money service providers are nearby. Such low costs directly translate into money saved by the mobile money account holder (Donovan, 2012).

3.2.1 Transferring Funds and Remittances

Mobile money is a fast, easy, and convenient means of making and receiving payments. It creates an opportunity for payments and remittances to be done within a short period of time. Aker et al. (2011) looked at the effects of using mobile money accounts for delivery of cash transfers versus traditional methods in Niger. They found that mobile money reduced the overall transaction costs of recipients, while offering an increase in freedom, flexibility, and privacy. A qualitative pilot study in rural Cambodia identified the benefits of time, security and convenience for micro-entrepreneurs who use mobile money services in rural areas (Vong et al., 1212).

Some studies have focused on the use of mobile money in remittances. Mobile money service allows users to benefit from remittances from either family members or friends living abroad (Alleman and Raoport, 2010). This alone results in improved economic well-being for the recipients. Furthermore, mobile money users can send and receive money from their business partners. The use of mobile money increases money circulation and boosts local consumption for the rural people. This tends to increase economic activity (Allen et al., 2014). The flow of remittances to rural areas increased economic activity by enabling "just-in-time" transfers that make capital available whenever it is needed (Allen et al., 2014).

Thulani, et. al. (2014) studied the usage of mobile money and financial inclusion among rural communities in Zimbabwe. They found that the usage of mobile money by the unbanked rural people is very high, especially for sending and receiving remittances. However, the use of mobile money for saving and loan acquisition was not very popular. Users were still relying on their traditional methods of saving and borrowing.

Morawczynski (2011) found that in Kenya incomes and savings for rural mobile money users increased due to remittances. A similar study by Mbiti and Weil (2011) found that the introduction of M-PESA in Kenya increased the frequency of remittances. This, over-time contributed to financial inclusion in the country.

Munyegera and Matsumoto (2016) investigated the impact of mobile money on household welfare in Uganda. The study revealed that households that used mobile money received more frequent and higher remittances. This increased the per capita expenditure on consumption, health, education, and semi-durables. It further contributed to their socio-cultural conditions. It is estimated that, over time, between 20 and 30 per cent of the remittances received could be used for savings and investment (GPFI, 2015).

3.2.2 Insurance and Savings

As mobile money facilities gain more ground, the ability to provide insurance, credit and savings is likely to increase as more consumers will demand such services. For instance, a micro-insurance product, Kilimo Salama, that used M-PESA to provide compensation to smallholder farmers had insured 12,000 farmers. Ten percent of these received compensation of up to 50 % of their insured inputs in their second year of operation (Sen and Choudhary.2017).

Qwik loan, a mobile money services facility in Ghana enables anyone to access the loan facility on the mobile money platform. This is without filling in complicated forms and providing documentation which the applicant may not even have (Mutisi, 2017).

Nandhi (2012) contends that mobile money services function as phone-cum savings accounts. It enables people without a formal bank account to engage in a safe and efficient way of saving. Demombynes and Thegeya (2012) used mobile savings data for 6,083 individuals collected by the Financial Sector Deepening – Kenya (FSD-Kenya) in 2010 to show that mobile money actually increases the level of savings and improves the efficiency and regularity of saving.

Mbiti and Weil (2011) analysed how M-PESA is used and its economic impact. They found that the increased use of M-PESA lowers the likelihood of people using informal savings mechanisms but raises the possibility of them being banked. Other studies have looked at mobile money as a hedging facility. Jack and Suri (2011) assert that mobile money users saved money in mobile money accounts to store funds which would be safe from theft and would make them inaccessible to other family members. They indicate that savings have the potential of adding social value to those constrained by costs from opening a bank account. Mobile money saves time involved in travelling large distances between the household of the user and the closest formal savings establishment. Since mobile money provides easy access to a savings device and easy saving, it is possible to conclude that mobile money users are likely to save more.

3.2.3 Accessibility

One of the barriers to financial inclusion is accessibility. Mahmood and Sahai (2011) consider accessibility as a barrier to financial inclusion. This is because conventional banks have no outlets in areas they perceive not to be profitable. In addition, the less educated and the low-income earners might feel intimidated to access services from conventional banks due to the tranquil atmosphere in the banking halls. Thus, mobile banking service providers have taken this opportunity to serve the 'unbanked' population for as long as there is mobile connectivity. Clients can transact anywhere thereby using time efficiently.

3.2.4 Security

The making of payments using mobile money has gained momentum over traditional payment systems However, there are concerns over the security of the payments. Security, risk and privacy of data are key factors in the decision of a customer to switch from traditional to modern payment systems. If a service provider is capable of assuring security and minimising the risk of money and data loss, a loyal customer base is guaranteed. This is because security and risk are the primary factors that subscribers evaluate prior to choosing a modern money transaction service (Casaló et al., 2007; Ali et al., 2011). One way to enhance the security of the mobile money system is to pair mobile money accounts with national identity systems. This way, a subscriber can even send money across geographical locations more safely than other alternatives like in-person transfers. With reduced cash handling by clients, the risk of being robbed in public is reduced. Mobile money has privacy and autonomy since it is less visible than cash.

3.2.5 Convenience

Kaura (2013) stressed that service convenience is a significant attribute in services retail shops, electronic banking and online shopping and a key decisive factor for time constrained customers. Mobile money removes the geographical constraint between the provider and the user of the service, thereby bringing about convenience. There is a reduced response time for an account holder wanting to borrow money. This is because the borrower does not incur transport costs in order to have access to the funds. There is instant disbursement of funds. This is compared to the lengthy vetting that one would be subjected to at a conventional bank. Banking may be performed throughout the day and in any place. Furthermore, many people use phones for socio-networking and entertainment, making mobile money part of a convenient package as all services are available on one device.

3.2.6 Affordability

Affordability is associated with the cost of a product. This refers to cost savings and operational efficiencies that a customer or firm may accrue as a result of the adoption of a technology (Boadi et al., 2007). Transaction costs are related to using the system, for example costs associated with sending and receiving money (Boateng, 2011). Micheni et al. (2013) suggest that if consumers perceive that the cost of mobile money is acceptable they will adopt and use it more easily.

Traditional banks have a chain of charges. These include transaction fees for withdrawing cash (whether from an Automatic Teller Machine [ATM] or over the counter), statements, balance inquiry, and monthly ledger fees. Kempson et al. (2004) term this practice as price exclusion. Generally, the rates for mobile money services are considerably lower than other alternatives. McKay and Pickens (2010) found that transactions on the mobile money platform were relatively cheaper than those of conventional banks. This makes mobile money a preferred alternative for the unbanked. Further, they found that branchless banking (including mobile money) was 19 percent cheaper on average than alternative services. Similarly, in Kenya M-PESA was one-third to one-half as expensive as alternative systems (Mbiti and Weil, 2011).

Broadly, our literature review on the use of mobile money for financial inclusion shows that mobile money has contributed immensely to financial inclusion in many countries. Most of these studies have employed the quantitative approach. Quantitative data was collected and analyzed. In addition, most of the studies were done in rural areas. It was understood that most of the unbanked population lived there. While financial inclusion studies document the positive effects of mobile money, they lack rigorous evidence with respect to how culture (perceptions and attitudes) impacts on the relationship between mobile money usage and financial inclusion. This is because the quantitative approach objectifies human experience by simply translating people's actions into statistics. The quantitative approach fails to capture the perceptions, attitudes and emotions that influence decisions to use mobile money services. In line with this concern, this study provides qualitative empirical evidence based on the ethnographical understanding of mobile money use as a catalyst to financial inclusion in Zambia.

4. Methodology

We have employed an ethnographic approach to understanding the influence of mobile money on financial inclusion in Kitwe and Kalulushi. Ethnography has made valuable contributions as a complement to quantitative research techniques in economic thematic areas. Ethnographic practice involves combining multiple research methods in order to best answer a research question or questions[2]. The main advantage of ethnography in studies that are normally quantitative in nature is that it adds extra quality to data collected and analysed in case studies. In particular, it has the ability to amplify a research experience during anthropological fieldwork research. Anthropological research can have a profound influence on the social, economic, and political spheres in which many economists and researchers operate. Designing social and economic policies for development requires use of methods like ethnography to increase understanding of social and economic problems.

Ethnography gives researchers experience in objectively recording data during fieldwork. It allows researchers to gain experience in interacting with and collecting data from key informants. This is an important aspect to consider especially in research studies that are recent and whose past data may not be available. Ethnography also allows researchers to apply fieldwork techniques such as focus group discussions and portraits.

A major strength of ethnography is the duration of being in the field. A long interaction with the field enhances one's knowledge and comprehension of social and cultural practices. The practice of ethnography consists of several methods[3]: observation, participation, interviewing, conversation, keeping a logbook and diary, interacting and the famous "thick description". The combination of the ethnographic method with qualitative surveys, visual methods and semi-structured interviews brings a level of in-depth knowledge to case studies (Bruijn et al., 2017).

An ethnographic methodology was utilised in this study. The researchers employed participant observation along with semi structured interviews for the enquiry. There were altogether 63 mobile money agents in Kitwe and

Kalulushi. Out of these, the study focused on the 50 mobile money agents and tellers who were considered as the main intermediaries for driving the process of banking the unbanked. The 13 other agents and tellers were non-operative at the time. The study also incorporated 62 respondents from two communities in Kitwe and Kalulushi. These are Mindolo and Mine areas respectively. The respondents were purposively picked and were willing to participate. This category of respondents was included because they lived in poorer communities relative to other communities like Riverside in Kitwe or Town Centre in Kalulushi. The latter are relatively affluent. The variations in terms of where the respondents live was very important for the researchers to understand if location of the respondent explains their use of mobile money services. Therefore, a total of 112 respondents comprising of agents, tellers and community members from Mindolo and Mine area were interviewed. The majority of the respondents came from Kitwe. It had 42 agents and 34 other respondents. Kalulushi had 8 agents and 28 other respondents. The dominance of Kitwe is because it is a large city and has developed commercial and industrial areas. There are many agents located in Kitwe's central business district. They are also located in communities like Parklands, Riverside, Buchi, and Chimwemwe, among others. On the other hand, Kalulushi is a small town, it therefore, provided fewer respondents than Kitwe. There were fewer agents given the limited business traffic that comes with a smaller population. While Kitwe had many locations for businesses run by mobile money agents, Kalulushi agents operated their businesses mainly from the main market, bus stop and Patason (Central Business District for Kalulushi). A few agents ran their businesses from shops, stalls and bars in selected streets around homes in the mine area. However, both respondents from Kitwe and Kalulushi provided important information that could explain what exactly motivates them to use mobile money services leading to financial inclusion.

Ethnographic studies among business people offer abundant and valuable data on access to financial services. However, the people involved must be treated with respect. They should be provided with ethical considerations that compensate for their participation in the research. The ethical approach adopted was to inform the respondents that their participation in the study was voluntary. They were free to opt out if they did not feel comfortable to answer any questions. Respondents were asked if a recording of their responses could be done. A majority declined. The respondents were also advised that the information obtained in the study was confidential with consent to be obtained where any actual citation of their response was to appear in any report.

5.Findings and Discussion

There has been an increase of providers of mobile money services in Kitwe and Kalulushi. Recent providers are Zamtel and banks such as the Zambia National Commercial Bank (ZANACO). However, the focus of this study was on respondents who used or operated under Airtel Money, MTN Money and Zoona service providers. The three providers were chosen as they have a longer presence in the Zambian mobile money system. Among the three mobile money service providers, we focussed on Airtel and MTN money services. These involve an agent to open accounts or assist users with accounts on any of the mobile network platforms. We expected that users and providers of mobile money services from Airtel and MTN could better explain the extent to which savings accounts are opened and other transactions are carried out by users and operators. Much attention was given to financial inclusion, the usage of mobile money services and the gender influences affecting mobile money usage in Kitwe and Kalulushi.

5.1 Mobile money and Financial Inclusion

In 2018, Zambia had 11.3 million mobile subscribers in an estimated population of 16.4 million (CSO, 2018). The country has experienced a high uptake of mobile phone usage. It is estimated that about 63% of the adult population owned a mobile phone in 2017. The growth in mobile phone usage has influenced the use of mobile money services. Almost every respondent indicated that they have a mobile phone and that they are able to access their mobile money accounts through a code given by mobile network operators. There are those who do not know how to make mobile money transactions despite them having mobile money accounts. We found that they prefer to use the services of agents and tellers who are found in very close proximity to their homes and work places. Respondents indicated that mobile money accounts are used for savings, remittance of money to social networks, purchase of airtime and payment of utility bills. Interestingly, mobile money accounts were also useful as a means for paying salaries for some respondents that worked as house servants, brick layers and shop attendants. Respondent 1 of Kitwe stated that:

> *As a business man, I have mostly kept my money at home. This includes money in terms of profit and even capital for reinvestment. I have never trusted the bank. The bank is full of charges and then they require you to have specific identification to get your money through the counter. Banks also charge you a lot just to have your own money. For example, people pay K5 to access their money through an ATM. In order for one to deposit their money over the counter, some banks charge as much as K100. Now in this day and age when money is so hard to find, one would rather keep their money in an account that*

will charge less or keep it at home where they can see it or even use it without incurring a cost for withdrawal. So when MTN money came about in 2011, I thought that I try to just keep my profits there. I monitored how my money was being kept and I was only charged a bit of money to withdraw. The kiosks are also found at many places around town and where I operate from. The convenience in location and affordability of the mobile money banking services made me opt to use MTN money compared to staying unbanked and risking my money getting stolen at home. Through the use of MTN mobile money, I have been able to also evade relatively high costs of depositing and withdrawing money at formal banks. I can safely say that mobile money with its affordable cost and convenient location allows us, who do not have bank accounts held at formal banks, to also be banked. The nature of banking is within our comfort zone since to go to the bank, you must dress very smartly and look a certain way. But to bank with mobile money, you can just take a walk in casual clothes and shoes and you will not feel out of place at a kiosk as you go to deposit or withdraw your money, which is more motivating to stay banked. By how they look, the mobile money kiosks and mobile money as a whole assures the safety of our funds, investments and insures us against theft from those that would know we have money in our homes.

Respondent 2 of Kalulushi shared a similar view on the importance of banking within one's environment of comfort. She added:

For some of us who are old, you don't have to walk too far to deposit money that is remitted to you. You don't have to go to town, you can find the kiosk right within the market and where people will accept how you look to stay banked. They will welcome you even if you have not bought new shoes or you don't appear to work. At the bank, they do smile at you, but one can tell that they are used to serving those that come with a lot of money and looking good in clothes that appear to be new. For people like us, MTN mobile money works to help us maintain our little savings that our children who work send.

Out of the 112 respondents, 65 were male while 47 were female. We found that men are more likely to hold mobile money accounts than women. They actually used the services that come with Airtel Money and MTN Mobile money accounts more than women. This is likely because most households in Kitwe and Kalulushi are headed by men. These work as miners and casual workers. Sometimes, the employer, especially in Chinese companies, pays cash or asks that employees open some formal bank accounts. On the other hand, some respondents reported that mobile money accounts can easily be opened at any time without many requirements. There are no introduction letters that formal banks request for. Thus, most working men interviewed, especially casual workers, find it much easier to be paid through mobile money accounts. Furthermore, we found that the majority of men owned both a formal bank account and a mobile money bank account. This was for easier transactions and money transfer to their family members, among others. These respondents affirmed that mobile money advances financial inclusion. They are able to save money, send money, lend money and pay bills more easily through their accounts. Respondent 3 of Kitwe explained that:

> *A long time ago, you could not send money so easily to those who depend on you. Now, with mobile money, you can easily send money to their accounts as long as they have a phone. It also doesn't matter what sort of phone one has, mobile money and banking through it can still be done. So even if I have a formal bank account, a mobile money account becomes a necessity. For us on the Copperbelt, with retrenchments and constant job insecurity in the mining sector, one needs to have an account that is not expensive to maintain and can even help you save on transport to some places like town as you go to pay bills. These days, every ngwee counts and that's why we use mobile money accounts. Mobile money has really helped us use banking services a lot more now than just saving or sending money informally like before.*

The study had 8 respondents above the age of 45 years. The other 104 were below this age. As stated earlier, we found that mobile money account ownership is low among women, and the aged in both Kitwe and Kalulushi. Respondent 4 of Kalulushi shared:

> *As women who are mainly house wives, it is not easy to even open a mobile money account because you do not have any source of regular income. With retrenchments of our husbands from copper mines, we can't afford to open mobile money accounts even if they are very useful. Mobile money accounts are cheaper than formal bank accounts in terms of opening charges, maintenance and even transactions that one can do from there. Despite the fact that I don't have a job and depend only on my husband's income, I desire to one day have a mobile money account. I think it's an easier way to stay banked and still use the convenient services that come with it like paying Go-TV and electricity bills.*

The study found that only 3 respondents using mobile money were formally employed while the rest were not. The popularity of mobile money accounts among the unemployed and those without regular incomes in both Kitwe and Kalulushi provides an opportunity to expand financial services to this category of people. The study observed that the expansion of financial services is possible since the majority of the unemployed and the aged without incomes have access to mobile phones. They obtained support in form of remittances from their friends and relatives through mobile money. Although the unemployed had lower levels of mobile phone ownership, they had higher levels of mobile money adoption than those that were in employment. This demonstrates the potential of mobile money to expand financial services to the unemployed and aged given the wider accessibility of mobile phones.

Both agents and their customers were very specific in relation to the use of mobile money. For those that use the network operated mobile money services like Airtel and MTN, mobile money was mostly used to purchase airtime, send and receive money and, to a lesser extent, to pay bills and to access saving. Those that use Zoona mostly used it for remittance of money across social networks. The majority of the respondents were found to use MTN money services.

Most adults used mobile money to purchase airtime, send or receive money, and pay bills. There was little evidence of mobile money motivating users to access insurance services. In fact, most of the respondents indicated that they have no information about the importance of opening mobile money accounts to enable access to insurance products and services. Generally, access to savings, credit and insurance products using mobile money is rare[4]. This implies that further innovation in the mobile money sector is required to make various financial products available to segments of people that are financially excluded because of lack of such products and services.

We found evidence of the lack of information about the safety of mobile money accounts. This is a widely cited barrier to mobile money account ownership and financial inclusion. Out of the 112 respondents the majority indicated that they lacked information and education on how money moves from one person to the next through the codes that are dialled. The lack of information about the safety of the mobile money platform to hold people's savings has nurtured distrust in the mobile money system. This may cause many people not to open mobile money accounts, even though they do not have formal bank accounts. Respondent 5 of Kitwe had this to say:

> *I have not owned a mobile money account after my bank account was closed because I don't trust those little banks. When one comes to think about it, we have no idea who owns these same kiosks and when they will leave with our money. Just look at Zoona kiosks these day, one day it's here, the next it's gone. We barely see any of these kiosks around. Now if*

that is MTN or Airtel money where they even encourage you to save your money, you could be doomed. They have all your savings, your details and everything they need to know about you. Yet, you know nothing about how they make it possible to transfer money from one person to the other, who is watching over your savings to ensure that they are safe and that no one steals even K1 from you. Further, there is no information on who should be held accountable for any loss in money incurred at booths. We have heard of tellers stealing money or money going missing across Zoona, MTN and Airtel mobile money services. We have no information on how such cases are dealt with to ensure people's money is safe. We don't even know who to follow if money should go missing and the kiosk where you deposited the money closes down and disappears altogether. There is just too much information asymmetry that makes me less keen to open a mobile money account. I would rather keep money in my wallet near me and can actually see its safety with me.

The implication of respondent 5's view is that financial education programmes aimed at enhancing peoples understanding of mobile money and the systems through which it is secured are important in enhancing financial inclusion. More information about the insurance of people's savings and how money transfers and bill settlements occur is crucial in promoting increased adoption among the financially excluded. Furthermore, mobile money literacy programmes that educate people on a wide range of mobile money products, their usefulness in management of funds and how they help individual users to live a better life, would be useful in promoting financial inclusion.

Respondent 6 of Kalulushi shared the view that knowledge of safety of funds and operations of mobile money businesses is very important. She had this to say:

In as much as mobile money is helping people to use financial services cheaply, we need to be taught to trust the system. We can only learn if knowledge is shared on how these systems work. Here in Kalulushi, we had Zoona which was very popular in 2014- 2015. People sent and received money through it and the booths would be crowed during the month end when people got paid. All of a sudden, a lot of Zoona booths closed and no one is as interested in using it as they are in using MTN mobile money. I can imagine if these booths closed while someone was just from sending money to their relative or friend, then even where the person is supposed to be receiving money from the booth also closed. There would be confusion caused by lack of knowledge as to why and when these booths will close… I do have an MTN mobile money account

> *but I don't keep more than K200 just in case even MTN closes like Zoona since the service providers don't communicate to us.*

Our findings further indicated that mobile money is more likely to be owned by individuals who do not own formal bank accounts. In this case, we note that Mobile money adoption negatively influences formal bank account ownership. Yet, to a large extent, mobile money positively influences financial inclusion. The channel through which financial inclusion is encouraged by using mobile money is largely through the influence of social networks. Respondent 7 explains:

> *Those of us who can't meet the minimum requirements of being banked with these big banks have the option of using mobile money. Mobile money helps us save and we can even borrow money these days with MTN Money. When you don't have money for mealie meal at home, you can borrow at a small interest and be able to pay it back later. This way mobile money helps us save and access credit to help us cushion the effects of poverty and lack of finances. I personally have questions about the safety of my money but because I have seen many people using it and no one I know has complained of money missing, I continue to rely on it for my savings. I will continue to use mobile money and also encourage others who are in my social network to use it too…*

From the cases discussed above, it is clear that mobile money services are serving as a tool for the financial inclusion of the unbanked sections of society. The major reasons given are that mobile money services are easily accessible and that account maintenance costs are affordable relative to the charges in the formal banking sector. The respondents also indicated that to access services at a mobile money kiosk was very easy. One does not need to dress formally as would culturally be expected if one was to go to a formal bank. Even though this is not a requirement by the formal banking establishments, society has set standards for itself which have worked to exclude those who cannot afford better clothing.

Mobile money customers were usually utilising them for sending or receiving money. This was basically because mobile money kiosks were located in residential areas where they could conveniently be accessed. The other services utilised were saving and borrowing money. This is especially the case with MTN-Money. Other common services were the purchasing of air time and the receiving of wages. Some employers (especially the Chinese employers) preferred paying wages through mobile money accounts. Although there are all these advantages to the use of mobile money, some members of the communities were sceptical. Some felt that the mobile money services were risky to use. One of the reasons given was that kiosks kept on changing locations. Some pointed to instances when money allegedly went missing. The mobile money providers could not provide reasons or information as to how they had dealt with such cases.

In terms of usage by gender, it is clear that in these two districts of the Copperbelt, men dominated the use of mobile money services. Women who participated in the discussions indicated that in most instances, it is men who had a regular source of income. Most women were housewives dependent on their spouses' income.

6. Conclusion and Policy Recommendations

This study aimed at investigating the influence of mobile money on financial inclusion. We use the case studies of urban Kitwe and Kalulushi. We employed ethnographic methodology in order to gain an in-depth understanding of the extent to which mobile money has encouraged the unbanked to access financial products and services. The findings indicate that mobile money positively influences financial inclusion. It is easy to open accounts with mobile money kiosks that are readily available in communities around Kitwe and Kalulushi. Mobile money services are conveniently located in places where the unemployed, aged and other segments of the unbanked population are found. We found that people use mobile money to send and receive money, pay utility bills and purchase airtime. Others save money which they use to finance needs such as payments for education, shelter and food. The implications of the findings are that since mobile money positively influences financial inclusion in urban settings, it could be scaled up in rural areas. In areas that are not connected to the national grid, other sources of energy such as solar power, diesel or petrol generating sets for charging mobile phones can be promoted. This could serve as a means to increase access to financial services and savings facilities. Furthermore, there is need to increase financial education and knowledge about mobile money systems and operations across populations in both urban and rural areas. This will encourage those that currently use mobile money to remain banked and inspire those who do not to open mobile money accounts. Ultimately, this growth in financial inclusion may lead to poverty reduction and access to economic and social amenities through mobile money services in both urban and rural areas.

Endnotes

1 See FinScope report of 2015 p.13

2 https://study.com/academy/lesson/the-role-of-anthropology-in-social-economic-political-domains.html

3 See: https://einaudi.cornell.edu/fast-moving-world-money-and-payments-anthropology-finds-niche

[4] Most of the respondents for instance indicated that one could only save up to K5000 in their account at that time. So there was need to broaden the band of savings so that people could be motivated to save more for the lower costs that come with mobile money.

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References

Agarwal, A. 2009. "The Need for Financial Inclusion with an Indian Perspective." *Economic Research*, IDBI Gilts, India.

Aker, J. C., R. Boumnijel, A. McClelland and N. Tierney. 2011. "Zap It to Me: The Short-Term Impacts of a Mobile Cash Transfer Program." Center for Global Development working paper, 268.

Aker, J., C. and I. M. Mbiti. 2010. "Mobile Phones and Economic Development in Africa." *Journal of Economic Perspectives* 24,3, 207–232.

Ali, S., R. Bahram, S. Ali and A. Azarnoosh. 2011. "Determinants of Customer Loyalty using Mobile Payment Services in Iran." *Interdisciplinary Journal of Contemporary Research in Business* 3, 6, 22-34.

Alleman, J. and P. Rappoport. 2010. "Mobile Money: Implications for Emerging Markets." *Communications and Strategies* 79, 3, 15-28.

Allen, F., E. Carletti, R. Cull, J.Q. Qian, L. Senbet and P. Valenzuela. 2014. "The African Financial Development and Financial Inclusion Gaps." *Journal of African Economies* 23,5, 614–42.

Bank of Zambia, 2016. Overview of Financial Inclusion-The 2nd International Banking and Finance Conference Hosted by The Zambia Institute of Banking & Financial Services (Zibfs) in Conjunction with the Alliance Of African Institute Of Bankers (Aaiob) Hotel Intercontinental, Lusaka, September 2016.

Bank of Zambia, 2018. "National Payment Systems Vision and Strategy." http://www.boz.zm/VisionandStrategy2018-2022.pdf. Accessed 15 November 2018.

Boadi, R.A., R. Boateng, R. Hinson and R.A Opoku. 2007. "Preliminary Insights into M-commerce Adoption in Ghana." *Information Development* 23,4, 253-265.

Boateng, R. 2011. "Mobile Phones and Micro-Trading Activities – Conceptualising the link." *Emerald* 13,5, 48-62.

Casaló, L., C. Flavián and M. Guinalíu. 2007. "The Role of Security, Privacy, Usability and Reputation in the Development of Online Banking." *Online Information Review* 31,5, 583-603.

Central Statistical Office, 2018. *Zambia in Figures*. Lusaka: C.S.O.

Chikumbi L., C. and C. Siame. 2018. "Mobile Money for Increased Financial Access? – We've got Your Back!" http://www.fsdzambia.org/mobile-money-for-increased-financial-access-weve-got-your-back/. Accessed on 16 November 2018.

Conroy, J. 2005. "APEC and Financial Exclusion: Missed Opportunities for Collective Action?" *Asia-Pacific Development Journal* 12, 1, 52 – 79.

de Bruijn, Butter I.C. and A.S. Fall. 2017. "An Ethnographic Study on Mobile Money Attitudes, Perceptions and Usages in Cameroon, Congo DRC, Senegal and Zambia. Final Report." http://saipar.org/wp-content/uploads/2017/12/Final-Report-Ethnographic-Study-on-Mobile-Money_March-2017.pdf. Accessed on 9 November 2018.

DeAssis, N. 2016. "Financial Inclusion and Social Economic Development." Paper presented to 2nd International Banking and Finance Conference hosted by the Zambia Institute of Banking & Financial Services (Zibfs) and the Alliance of African Institute of Bankers (Aaiob). Hotel Intercontinental, Lusaka, September 2016.

Demirguc-Kunt, A. and L. Klapper. 2012. *Measuring Financial Inclusion: The Global Findex Database.* Washington, D.C.: The World Bank.

Demirguc-Kunt, A., L. Klapper, D. Singer and P. Van Oudheusden. 2015. "The Global Findex Database 2014: Measuring Financial Inclusion Around the World." (Policy Research Working Paper No. WPS7255). The World Bank Group.

Demirgüç-Kunt, A., T. Beck, and P. Honohan. 2008. *Finance for All?: Policies and Pitfalls in Expanding Access*. Washington, D.C.: The World Bank.

Demombynes, G. and A. Thegeya. 2012. "Kenya's Mobile Revolution and the Promise of Mobile Saving." World Bank Policy Research Working Paper, No. 5988.

Donovan, K. 2012. "Mobile Money for Financial Inclusion Information and Communications for Development." World Bank Publications, 61-73. Available at https://doi.org/10.1596/9780821389911_ch04. Accessed 8 November 2018.

Dzokoto, V. A. and M. Imasiku. 2013. "Cashless or Cashlite? Mobile Money Use and Currency Redenomination in Zambia." IMTFI Final Report, Available at https://www.imtfi.uci.edu/research/2013/Zambia%20Report%20Dzokoto%20and%20Imasiku%20final.pdf. Accessed on 8 November 2018.

Fanta, A.B., K. Mutsonziwa, R. Goosen, M. Emanuel and N. Kettles. 2016. "The Role of Mobile Money in Financial Inclusion in the SADC Region. Evidence using FinScope Surveys." FinMark Trust. Available at https://www.researchgate.net/publication/311576448_The_role_of_mobile_money_in_financial_inclusion_in_the_SADC_region. Accessed on 15 November 2018.

Financial Sector Deepening Zambia (FSDZ). 2016. FinScope Report 2015.

Available at https://www.fsdzambia.org/publication/finscope-2015/ Accessed on 24 June 2020.

Gardeva, A. and E. Rhyne. 2011. *Opportunities and Obstacles to Financial Inclusion*. Cambridge MA: Center for Financial Inclusion Publication number 12.

Huges N., and S. Lonie. 2007. "M-PESA: Mobile Money for the "Unbanked" Turning Cellphones into 24-Hour Tellers in Kenya Innovations." *Technology, Governance, Globalization* 2:1-2, 63-81. Available at https://www.mitpressjournals.org/doi/abs/10.1162/itgg.2007.2.1-2.63. Accessed on 3 July 2020.

International Fund for Agricultural Development and the World Bank Group. 2015. "The Use of Remittances and Financial Inclusion." A report to the G20 Global Partnership for Financial Inclusion. Available at: https://www.ifad.org/documents/38714170/40187309/gpfi.pdf/58ce7a06-7ec0-42e8-82dc-c069227edb79. Accessed on 5 November 2018.

International Finance Corporation (IFC). n.d. "Mobile Money Scoping." Country Report-Zambia. Available at: https://www.ifc.org/wps/wcm/connect/e90eafe7-654e-4951-b4c9-ca32bc5cc1bd/Zambia+Market+Scoping+Report.pdf?MOD=AJPERES. Accessed on 1 December 2018.

International Growth Centre (IGC). 2016. Interoperability of Mobile Money: International Experience and Recommendations for Mozambique. Available at https://www.theigc.org/wp-content/uploads/2017/01/Hoernig-et-al-2016-Final-Report.pdf. Accessed on 1 December 2018.

Jack, W. and T. Suri. 2011. "Mobile Money: The Economics of M-PESA." Working Paper Series, Working Paper 16721. Available at http://www.nber.org/papers/w16721 Accessed on 3 April 2019.

Kanobe, F., P.M. Alexander and K. J. Bwalya. 2017. "Policies, Regulations and Procedures and their Effects on Mobile Money Systems in Uganda." *The Electronic Journal of Information Systems in Developing Countries* 83,1, 1–15.

Kaura, V. 2013. "Service Convenience, Customer Satisfaction, and Customer Loyalty: Study of Indian Commercial Banks." *Journal of Global Marketing* 26,1, 18-27.

Kempson, E., A. Atkinson and O. Pilley. 2004. *Policy Level Response to Financial Inclusion in Developed Economies: Lessons for Developing Countries*. University of Bristol.

Kikulwe E. M., E. Fischer and M. Qaim. 2014. "Mobile Money, Smallholder Farmers, and Household Welfare in Kenya." *PLoS ONE* 9,10: e109804. doi:10.1371/journal.pone.0109804. Accessed on 5 December 2018.

Mas, I. and D. Radcliffe. 2010. "Mobile Payments Go Viral: M-PESA in Kenya." In the "Yes Africa Can: Success Stories from a Dynamic Continent" series. World Bank, Washington, DC. http://ssrn.com/abstract=1593388. Accessed on 16 November 2018.

Mbidde, J. 2017. "Mobile Money Services and Financial Inclusion in Rural Areas of Uganda; A Case Study of Bukomansimbi." MA Thesis, Makerere University.

Mbiti, I. and D. N. Weil. 2011. "Mobile Banking: The Impact of M-PESA in Kenya." (No.w17129). National Bureau of Economic Research.

McKay, C. and M. Pickens. 2010. "Branchless Banking 2010: Who's Served? At What Price? What's Next?" CGAP Focus Note No. 66. Available at https://www.gsma.com/mobilefordevelopment/wpcontent/uploads/2012/06/fn66_rev1_d_25.pdf. Accessed on 19 November 2018.

Micheni, E.M., I. Lule and G.M. Muke. 2013. "Transaction Costs and Facilitating Conditions as Indicators of the Adoption of Mobile Money Services in Kenya." *International Journal of Advanced Trends in Computer Science and Engineering* 2, 5, 9-15. Available at http://sbms.tukenya.ac.ke/images/staff/transactions-cost.pdf. Accessed on 6 November 2018.

Ministry of Finance. 2017. National Financial Inclusion Strategy 2017–2022. Economic Management Department, Lusaka. Available at: https://www.boz.zm/National-Financial-Inclusion-Strategy-2017-2022.pdf. Accessed on 10 January 2019.

Mohan, R. 2006. "Economic Growth, Financial Deepening and Financial Inclusion." *Reserve Bank of India Bulletin*. Mumbai.

Morawczynski, O. 2009. "Examining the Usage and Impact of Transformational M-Banking in Kenya." In Nurgy Aykin (ed.) *Internationalization, Design and Global Development*. Berlin: Springer.

Morawczynski, O. and K. Sean. 2011. "Saving on the Mobile: Developing Innovative Financial Services to Suit Poor Users." *The Mobile Financial Services Development Report*. Washington, D.C.: World Economic Forum.

Munyegera, C. K. and T. Matsumoto. 2016. "Mobile Money Remittances and Household Welfare: Panel Evidence from Rural Uganda." *World Development* 79, C, 127-137.

Mutisi, T. M. 2017. MTN Ghana partnered with AFB Ghana to Offer Quick Loans via Mobile Money Platform. Available at https://innovation-village.com/mtn-ghana-partnered-afb-ghana-offer-quick-loans-via-mobile-money-platform/. Accessed on 3 July 2020.

Nandhi, M. A. 2012. "Effects of Mobile Banking on the Savings Practices of Low Income Users – The Indian Experience." Institute for Money, Technology and Financial Inclusion, University of California, Irvine. Available at: https://www.imtfi.uci.edu/files/blog_working_papers/2012-7_nandhi.pdf. Accessed on 3 July 2020.

Ngambi, W. 2016. "Commoditizing Financial Services." Paper presented to the 2nd International Banking and Finance Conference hosted by the Zambia Institute of Banking & Financial Services (Zibfs) and the Alliance of African Institute of Bankers (Aaiob) at Hotel Intercontinental, Lusaka, September 2016.

Peruta, M. D. 2017. "Adoption of Mobile Money and Financial Inclusion:

a Macroeconomic Approach through Cluster Analysis." *Economics of Innovation and New Technology* 27,3,1-20.

Sackitey, D. T. 2018. "Achieving Financial Inclusion in Ghana through Mobile Money." *Texila International Journal of Academic Research* 5, 1, 1 – 5.

Sen, S. and V. Choudhary. 2017. Connecting Smallholders to Knowledge, Networks, and Institutions. Module 10 (ICT Applications for Agricultural Risk Management), pages 257 - 282 Available at https://elibrary.worldbank.org/doi/10.1596/978-1-4648-1002-2_Module10. Accessed on 6 November 2020.

Sinclair, P. S. 2001. *Financial Exclusion: An Introductory Survey*. Edinburgh Centre for Research in Socially Inclusive Services (CRISIS), Heriot-Watt University..

Thulani, A., P. Chitakunye and B.Z. Chummun. 2014. "Mobile Money as a Strategy for Financial Inclusion in Rural Communities." *Mediterranean Journal of Social Sciences* 5, 25, 216-224.

Tiwari, R., S. Buse and C. Herstatt. 2006. "Mobile Banking as Business Strategy: Impact of Mobile Technologies on Consumer Behavior and its Implications for Banks." Proceedings of the Portland International Conference on Management of Engineering and technology, Istanbul, 8-13 July 2006. Available at https://www.semanticscholar.org/paper/Mobile-Banking-as-Business-Strategy%3A-Impact-of-on-Tiwari-Buse/bc99ef2e72bd68f4a62e08ced4a568b329b06909. Accessed on 3 December 2018.

Vong, J., J. Fang and S. Insu. 2012. "Delivering Financial Services Through Mobile Phone Technology: a Pilot Study on Impact of Mobile Money Service on Micro–entrepreneurs in Rural Cambodia." *International Journal of Information Systems and Change Management* 6, 2, 177-186.

World Bank. 2014. *World Bank Global Findex Report* available at https://globalfindex.worldbank.org. Accessed on 19 June 2020.

Zambian Business Times. 2018. "Mobile Money Users Soar to 1.6 Million, but Financial Inclusion Still Low." Available at https://www.pressreader.com/zambia/zambian-business-times/20180305/281487867044773. Accessed on 19 June 2020.