Impact of Financial Inclusion in Line with Mobile Money on Currency in Circulation

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ABSTRACT

Trade initially started from Barter System and progressing through time, money has become the most used commodity as a medium of exchange. Notes and Coins have outlived the longest till our current 4th Generation era where technology has improved the efficiency and effective means of trade with the use of electronic payment system. Despite electronic payment systems being implemented to a very large scale in Zambia, Bank of Zambia statistics showed an increase in Currency in Circulation over the past 10 years from K3.4 billion (FY12) to K13.5 billion (FY21). Pandemics such as Covid-19 have really shown us that doing business electronically is more steady, efficient, and effective than when doing it the traditional way. This study investigated the impact of financial inclusion in line with mobile money on currency in circulation in Zambia.

The study found that Mobile Money agents increased by 21.16% to 156,040 in 2021 from 128,789 in 2020. This was explained by a very strong positive relationship ($r = .934$; $p < .000$) between Mobile Money use and Currency in Circulation. This was against a theoretical understanding whereby CIC was supposed to show a steady decrease as more money is being used electronically. The study also found poor full transition to electronic transactions and demand for cash. The strategies for reducing currency in circulation found included education of the general public on financial inclusion and promotion of cashless transactions in shopping malls.

The study concluded that mobile money did not reduce currency in circulation but increased the currency in circulation as cash was still needed in the current trading pattern in Zambia. More awareness needs to be done for more people to embrace mobile transactions.

Keywords: Financial inclusion, mobile money, currency in circulation, Digital Finance, economic circle

INTRODUCTION

While mobile phones have been credited inter alia with helping to control diabetes (Liang et al., 2011) and assisting smokers to quit (Whittaker et al.,2012). It does not seem a large step to argue that they could help increase financial inclusion, especially considering their importance in the dissemination of information and provision of financial services, particularly the innovations associated with mobile money services (Ahmad and Fei Jiang, 2020).

Financial Inclusion means making affordable the banking services to the vast segment of the society whether they are poor or excluded (Kelkar, 2010). It helps to eliminate the problem of leakages from subsidy and welfare distribution, boosts saving, increases credit availability, and breaks the vicious circle of poverty of a nation (Ellis, 2010). This helps in better circulation of money in an economy. It is a basic understanding that widening financial inclusion reduces the cost of cash management, and shields the strengths of the local currency, while promoting a healthy financial system in the economy (Uba, 2013).

This chapter presents the general background on which the study on the impact of financial inclusion in the line of Mobile Money on Currency in Circulation in Lusaka Zambia was anchored. It begins with highlighting evolving trends in the service sector and further describes the problem the study hoped to resolve. The chapter also highlights the study objectives and research questions which guided the inquiry. It also covers study purpose, significance and conclude with the dissertation structure and summary of the chapter.

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

Theoretical Literature

The positive impact of mobile money on individuals, households and businesses has been demonstrated by a burgeoning body of research and empirical evidence. Mobile money reduces transaction costs for users and helps households to manage their cash flows more effectively, enabling them to smooth consumption, manage risk and build working capital. It also allows firms to invest and build capital over time, fostering the creation and expansion of business, and facilitates faster and more efficient government transfers. These benefits allow many mobile money users to realize significant quality of life improvements (Aron, 2017). This understanding is based on long established theoretical understanding. Khatat, (2018) identifies two types of currency in circulation models which this study adopted: (1) a first generation derived from the theory of money demand and (2) a second generation aimed at producing daily forecasts of currency in circulation.

Theory 1: Fisher's Transactions Approach to Demand for Money:

In his theory of demand for money Fisher I (1956) and other classical economists laid stress on the medium of exchange function of money, that is, money as a means of buying goods and services. All transactions involving purchase of goods, services, raw materials, assets require payment of money as value of the transaction made. If accounting identity, namely value paid must equal value received is to occur, value of goods, services and assets sold must be equal to the value of money paid for them. 2.2 Accelerator Interventions and Business Growth

Several studies have assessed the impact of accelerator programs on SME growth in different contexts. For instance, I-DEV International and Aspen Network of Development Entrepreneurs (ANDE) evaluated the growth of SMEs in Georgia, USA, finding significant increases in revenue and employment among participating entrepreneurs (I-DEV International & ANDE, 2014). Similarly, in Kenya, research by the Argidius Foundation focused on accelerator firms primarily in the agricultural and technology sectors, revealing geographical biases in their distribution (Argidius Foundation, 2015).

Theory 2: Currency in Circulation

In monetary economics, the currency in circulation in a country is the value of currency or cash (banknotes and coins) that has ever been issued by the country's monetary authority less the amount that has been removed. More broadly, money in circulation is the total money supply of a country, which can be defined in various ways, but always includes currency and also some types of bank deposits, such as deposits at call. When banks no longer believe they need as much cash in reserve they would return the cash to the monetary authority (Welch et al. 2016). The published amount of currency in circulation tends to be overstated by an unknown amount. For example, money may have been destroyed, or stored as a form of security (the proverbial "money under the mattress"), or by coin collectors, or held in reserve within the banking system, including currency held by foreign central banks as a foreign exchange reserve asset.

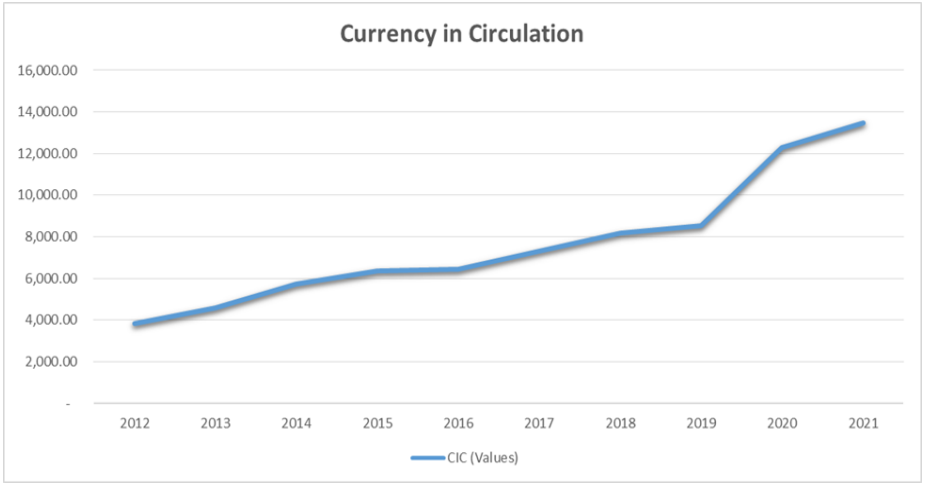


Figure 2.1 Currency in Circulation

Cash held by banks is counted as part of the currency in circulation which Mobile Money operators' cash in and cash out from and stood at K13.5 billion as of December 31, 2021 (Bank of Zambia, 2021).

Mobile Banking and Mobile Money

These 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 if 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.

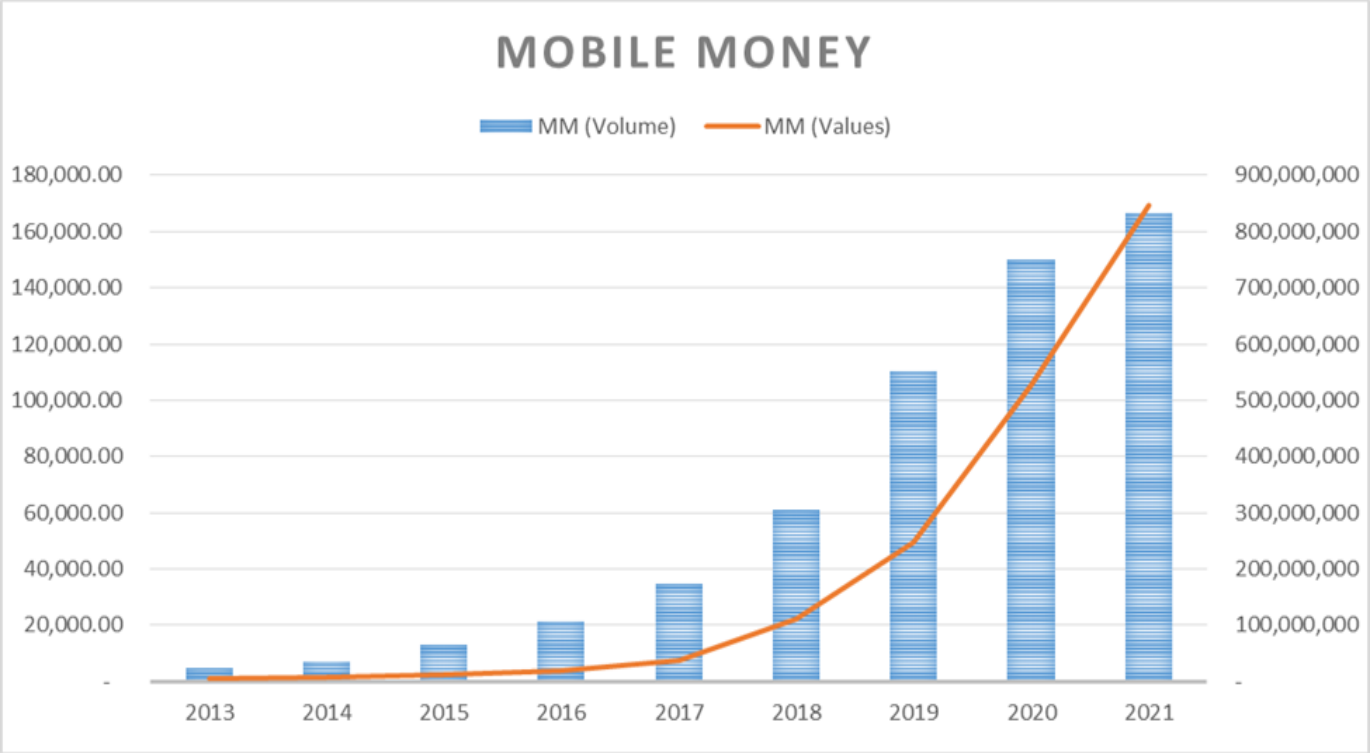


Figure 2.2 Mobile Money

The value of transactions processed on the mobile money platforms increased by 60.1% (2021: 114%) to K 169 402.43 million from K105,815.1 million in 2020 whereas the volume of transactions increased by 11.1% (2021: 35.8%) to 834,121,817 transactions from 750,514,157 transactions recorded in 2020.

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 can engage in transactions like 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 (Agarwal, 2009). Tiwari et al. (2006) stated 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. Increasingly, however, even the literate and banked have adopted mobile money services because of convenience.

The Evidence Gap

The discussion above shows that the impacts of mobile money on monetary and financial stability and the implications for central bank policy instruments are theoretically ambiguous and need to be understood through empirical analysis. However, research in both areas is limited and the majority of studies thus far have focused on a single country (often Kenya or Uganda). Of the few studies that exist, most have looked at the impact on inflation and have generally found that mobile money has either a moderate impact or no impact. For example, Aron et al (2015) found no evidence of a link between mobile money and inflation in Uganda while Weil et al (2012) found that the monetary implications of mobile money in Kenya were likely to be minimal (Aron et al. 2015; Weil et al (2012).

Adam and Walker (2016) found that mobile money should improve the macroeconomic stability of countries and is unlikely to undermine the conduct of monetary policy. The evidence assessing the impact of mobile money on financial stability and commercial banks is somewhat more mixed. An early study on Uganda found that mobile money was negatively correlated with banks' liquidity positions and therefore could have an impact on banks' ability to mobilize savings and deposits (Kamukama and Tumwine 2012). However, more recent studies have challenged this by showing that mobile money can be a positive driver of private sector credit and the payments ecosystem and can increase the likelihood of users becoming banked (Mawejje and Lakuma 2017; Nampewo et al. 2016).

Other studies that have assessed the impact of mobile money and mobile financial services on individual or groups of commercial banks, mostly focusing on Kenya, have generally found that they have a positive impact or otherwise no impact on the financial performance of commercial banks (Kinyanzui et al. 2018).

Transferring Funds and Remittances

The use of mobile money as a payment system is a rapid, straightforward, and user-friendly way to send and receive funds. It allows for payments and remittances to be completed in a brief timeframe. Aker (2011) examined the impact of utilizing mobile money accounts for cash transfers compared to conventional methods in Niger.

Financial Inclusion Principles

Service convenience is a critical factor in various sectors, particularly in retail shops, electronic banking, and online shopping. According to Kaura (2013), it plays a vital role for time-constrained customers who prioritize efficiency and ease of access when utilizing mobile money services. Accessibility in the context of financial inclusion refers to the ease with which individuals can access financial services (Mahmood and Sahai 2011). This includes physical access to banking facilities, as well as the psychological and social barriers that may prevent certain populations from utilizing these services. Affordability is another critical factor influencing the adoption of technology, particularly in financial services such as mobile money (Boadi et al., 2007). The concept of affordability encompasses not only the direct costs associated with a product or service but also the broader implications of cost savings and operational efficiencies that can be realized by consumers or firms when they adopt new technologies. Finally, with a more stable environment in the security of payment systems, there is a rise for mobile money as a preferred payment method over traditional systems has been significant, particularly in regions where banking infrastructure is limited. However, this shift brings with it a host of security concerns that must be addressed to ensure customer trust and loyalty (Casaló et al., 2007; Ali et al., 2011).

Conceptual Framework

The conceptual framework "sets the stage" to present the research question that drives the investigation being reported based on the problem statement. The problem statement of a thesis gives the context and the issues that caused the researcher to conduct the study. (McGaghie, et al., 2001). Therefore, this study assisted in measuring how the increase in Mobile Money transactions affects the growth of Currency in Circulation, the independent variable being Mobile Money while the dependent variable being Currency in Circulation. The diagram bellow illustrates the relationship between the two variables.

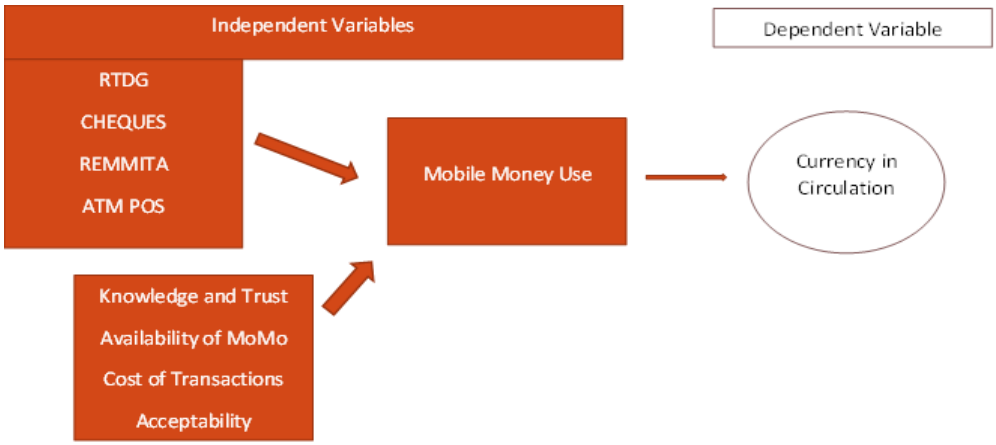


Figure 2 Conceptual Framework

METHODOLOGY

This research employed a mixed-methods approach, combining both qualitative and quantitative methodologies to capitalize on their respective strengths and enhance the understanding of the research problem. The study utilized a convergent research design, aiming to gather complementary data on the same topic to achieve a comprehensive understanding (Morse, 1991; Patton, 1990).

The study targeted staff at the central bank (Bank of Zambia – BoZ), 3 banks and 3 telecommunications companies. This particularly included the Banking Currency & Payment Systems department at BoZ, three Banking Operations staff at Zanaco, Absa & Indo Zambia bank as well as Mobile Money Services staff at Airtel, MTN & Zamtel. Further, the study targeted to purposely sample documents related to the study as was be guided by heads of these departments.

Data collection involved both primary and secondary methods. Primary data collection instruments included interviewer-administered questionnaires and interview guides. The questionnaires were semi-structured, comprising both open-ended and closed-ended questions. Closed-ended questions required respondents to select predefined options, while open-ended questions allowed respondents to provide their own answers based on their experiences.

ANALYSIS OF THE RESULTS

Social Demographic Information

Social demographic information refers to the statistical data that describes the characteristics of a population. This includes various attributes such as age, gender, race, ethnicity, education level, income, marital status, and employment status. The collection and analysis of this data are crucial for understanding societal trends and patterns.

Gender

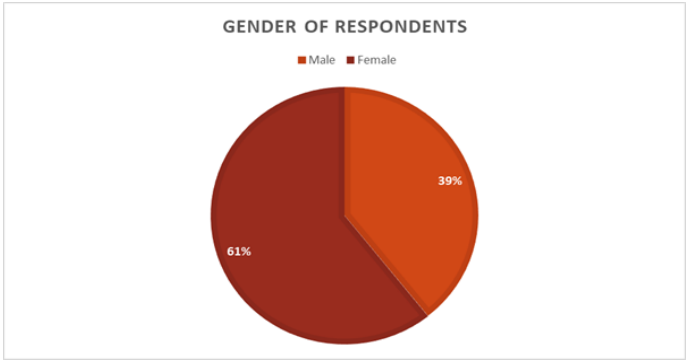


Figure 4.1 Gender of all Study Participants

The researcher initially interacted with 7 director participants which included 1 official from the central bank, 3 directors from mobile money companies and 3 from commercial banks. From these 7 participants 4 were female representing and 3 were male. Among the 21 other staff members interviewed from across the three strata, 8 were male and 13 were female. Overall, the study involved 61% female and 39% males as shown in figure 4.1.

Age

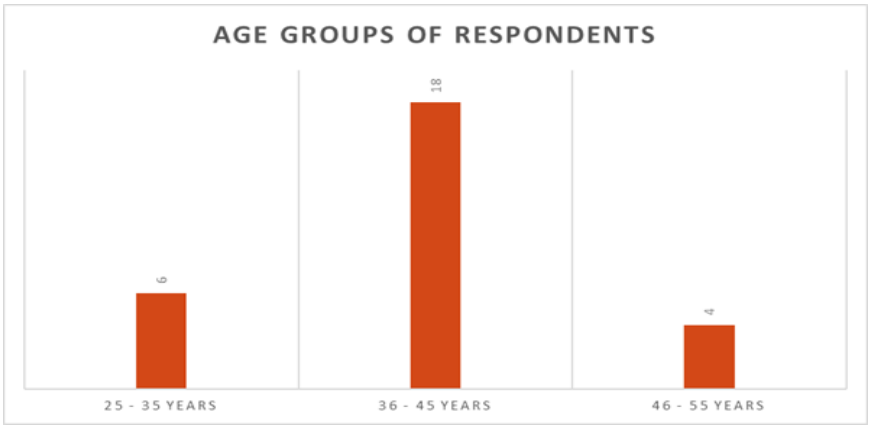


Figure 4.2 Age Groups of Respondents

The interviewees in terms of age fell in the three bracket age groups which are 25 – 35 years, 36 – 45 years and 46 – 55 years. The majority of respondents 64% were aged between 36 and 45 years while 21% of respondents were aged between 25 and 35 years only a 15% were in thee 46 to 55 years age bracket.

Table 4.1. Mobile Money and Currency in Circulation

	CIC	MoMo
CIC	**1**	
MoMo	**.934**	**1**

The correlational analysis for the data obtained over a 10-year period indicated a very strong positive relationship (r= .934; p<.000). The Pearson correlation value of 0.934 which is very close to 1.

The researcher further subjected the information to another test, the ANOVA for purposes of triangulating the study findings observed from the Pearson's Correlation Coefficient. Below is the descriptive statistics output from SPSS.

Table 4.2 Correlation Analysis of Mobile Money and Currency in Circulation

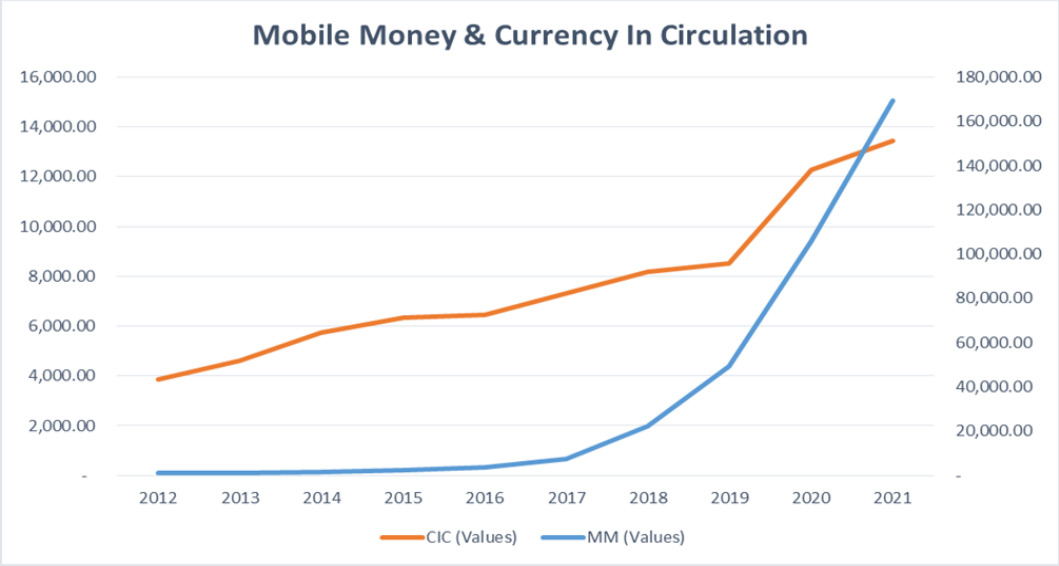
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	7.586E7	1	7.586E7	54.401	.000[a]
	Residual	1.115E7	8	1394367.372		
	Total	**8.701E7**	**9**			

Predictors: (Constant), MoMo
Dependent Variable: CIC

The output from the ANOVA table indicated an F-Statistic value of 54.401 which indicates that the test was significant at 5% significance level supporting the positive relationship between MoMo and CIC which was observed in the Pearson's Correlation Coefficient.

The output below showed a regression between the two variables and trend analysis of the two variables as well as other payment systems mechanisms.

Table 4.3 Trend Analysis: Mobile Money & Currency in Circulation (Values)



Active Mobile Money agents increased by 21.16% to 156,040 in 2021 from 128,789 in 2020. Results show a steady increase in Currency in Circulation and a sharp increase after 2017 to 2021 in Mobile Money transactions. Theoretically CIC was supposed to show a steady decrease as more money is being used electronically.

The Cash in Cash out mechanism on which MM works affects CIC as demand for money is high to meet the financial transactions. Even during the Covid-19 period, CIC kept increasing despite the sensitization that we handle less of cash and more of EFT transactions to prevent the spread of the virus. Other factors do come in such as withdrawing money for emergency use, etc. but that gets to be stagnant money as we do not withdraw money daily for keeping yet the mobile operators do so daily in order to trade. A mobile money booth without any physical flow of cash in and out is not a functional booth. RTGS/DDACC, POP, Net Remittance & ZIPPS/Interbank all show an increase in activity. This means that people are transacting more on the online platforms more towards businesses than individuals.

Empirical results of show that there is an extremely close relationship between CIC and MM. Ideally for MM to function especially with all the mobile money outlets, cash needs to be involved. MM requires less regulatory requirements to access financial services unlike the conversional banking system.

DISCUSSIONS

These are findings presented above with other studies for consistence and differences. It also related the findings to the theories used in the study as well as methods employed.

Mobile Money and Currency in Circulation (1st Research Objective)

From the SPSS output in table 4.1, it is noted that mobile money increases the value of currency in circulation. According to (Allen et al., 2014), 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). This is good for Zambia especially people in rural set-ups who never had access to the financial systems are now able to transact in quick way without struggling to get to nearest town where there is a post office or commercial banks. The flow of remittances to rural areas increased economic activity by enabling “just-in-time” transfers that make capital available whenever it is needed. However, this does not support the inclusion being sought in the context of Lusaka as majority of residents and businesses have the ability to completely go cashless. The only drawback is that culturally, Zambians have a trust issue when it comes to financial management of funds. It’s easier for a local person to have actual cash to trade rather that have the funds electronically. 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. The banking system has been facing a high demand for cash over the years based upon the fact that people who transact prefer having physical cash to make payments rather than having to use more electronic advance systems. This demand for cash is driven by the individuals systematically that the central bank must provide the currency to pay bearer on demand. If individuals had more trust into the payment systems structure, it would be easier to lean more on MM and have CIC reduced. 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).

Regarding financial transaction trends highlighted above, similar findings were observed in Kenya where it was observed that value of mobile money transactions as a percentage of GDP increased tremendously from a mere 0.75 percent of GDP in the first year of establishment to a remarkable 44.74 percent of GDP by 2018 (International Monetary Fund, 2018).

CONCLUSIONS & RECOMMENDATIONS

“The digital revolution has catalyzed increases in the access and use of financial services across the world, transforming ways in which people make and receive payments, borrow, and save,” said World Bank Group President David Malpass. “Creating an enabling policy environment, promoting the digitalization of payments, and further broadening access to formal accounts and financial services among women and the poor are some of the policy priorities to mitigate the reversals in development from the ongoing overlapping crises.

Mobile Money and Currency in Circulation

The study found a strong positive relationship between Mobile Money and Currency in Circulation imply that an increase in mobile money use increases the currency in circulation contrary to the ideal situation as is expected if mobile money is fully adopted

Conclusion

Based on the findings presented above, the researcher made the following conclusions.

Mobile Money and Currency in Circulation (1st Research Objective)

Mobile Money has a negative impact on Currency in Circulation as an increase in mobile money use increases the currency in circulation contrary to the ideal situation as is expected if mobile money is fully adopted. This conclusion responds to research question number one.

Recommendations

Recommendations which various stakeholders in the business industry can consider in order to reduce currency in circulation and achieve a cashless society.

Mobile Money and Currency in Circulation

Mobile money in its current form is rather increasing the currency in circulation, therefore the following are the recommendations.

Conduct awareness among the general community assuring the safety of electronic money in their mobile money or bank accounts.

Provide incentives to attract the use of mobile money for routine business transactions while introducing cash-out limits to reduce withdraw of cash. Increasing mobile money option through more mobile telecommunication companies coming on board.

Simplifying bank to mobile money transactions and vice versa.

Recommendations for Future Research

As an extension of this study, the researcher recommends that another similar study be conducted at a broader scale to accommodate more banks more districts in Zambia, and other money transfer agents such as Kazang, Spein, Zeepay etc. secondly another study would be involving the beneficiaries of mobile money to understand the perceptions of a cashless society and implications of financial inclusion to them.

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