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## **Mobile Money access and usage among the rural communities in Zimbabwe**

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# Mobile Money access and usage among the rural communities in Zimbabwe

## ABSTRACT

The study sought to determine the level of mobile money access and usage among the rural households in Zimbabwe. A descriptive research design was employed in a mixed method research approach. The study population comprised of all rural districts in the Midlands Province and the target population was 8258 rural households. A sample size of 367 household heads was determined in the Kwekwe Rural District. A questionnaire was used as a data collecting instrument. The results of the study revealed a moderate use of mobile money by rural households. The widely used service was the funds transfer services (sending and receiving) with a mean score of 1.81. Mobile money was used as a vehicle of remitting funds. More over mobile money had improved access to financial services as indicated by the reduced distances walked to access the nearest mobile money agents. Majority of the users were walking distances of less than 10km to access the service. When assessing the demographic influences on the use of mobile money, an association between education and mobile money use was supported by a Pearson Chi-Square value of 62.803 at p value 0.000.

## Key phrases

Mobile money and rural households

## 1. INTRODUCTION

There has been a steady growth of mobile communication worldwide in the past few decades. Cell phone coverage has spread to most parts of the world, reaching the previously unreachable remotest parts of most developing countries, especially in Africa. This has been necessitated by the development of a wide range of mobile phones that are multi-software enabled, allowing their experimentation in many spheres, including financial applications and banking solutions (Isaac and Sherali, 2014). The growth of mobile communication has not come without several other positives. Recent developments in mobile money have made it possible for users to access their bank and insurance accounts using their mobile phones without having to physically visit their respective bank and insurance branches, a pulling factor more and more of the banked/insured population cannot afford to resist any more in Zimbabwe (Chummun, 2017). Not only has the mobile phone allowed access to bank accounts, but it acts as a form of a bank account as a result of mobile money services. This is expected to raise financial inclusion especially at the lower

end of the social spectrum, which has suffered financial exclusion for a very long time, while reducing the costs of access and use of basic financial services. The disadvantaged communities have positively embraced this form of innovation like none other in the past centuries.

There have been significant developments in the mobile money sector in Zimbabwe since 2011. Zimbabwe has three major Mobile Network Operators (MNO's), namely Econet Wireless, Telecel and NetOne, all of which have launched mobile money products in one way or the other. They offer a number of mobile financial services and these include bill payments, insurance, savings, transfers and payroll services among others. Overall, a range of service providers have rolled out mobile money facilities as shown in Table 1 :

**Table 1: Mobile Money Deployments in Zimbabwe**

Institution	Mobile Product
FBC	Mobile Moola
Tetrad	eMali
Kingdom Bank	Cellcard (Now defunct)
Interfin Bank	Cybercash
CABS	Textacash
NetOne	One Money (Once called One Wallet)
Telecel	TeleCash
Econet Wireless	EcoCash

Source: Kufandirimbwa, Zanamwe, Hapanyengwi and Kabanda (2013)

In 2019, the revenue has increased by 36% compared to 2014 when a total of \$1.4 billion worth of deposits were made through the three network operators' mobile money services (Chakanyuka 2019). This figure is an 80.8% increase from seven million in 2013, which is very impressive by any standards used for measuring financial services deposits. Mobile money transfer subscriptions went up by 7.3% in the fourth quarter of 2014, along with the value of those same transactions which increased by 10.6% to a quarterly total of \$445.7million. The total number of mobile money agents increased from 9,169 in 2013 to approximately 23,379 in 2018; something that makes sense considering that Tele-Cash was introduced in the same period (Reserve Bank of Zimbabwe, 2014).

## **2. PROBLEM STATEMENT**

Shaikh and Karjaluoto (2015) and Thulani, Chitakunye and Chummun (2014) noted that although several studies have been conducted on mobile financial inclusions, however not many studies have been focused on assessing the impact of mobile money on populations. Their argument was premised on the levels at which such innovations were by that time (Munongo and Biza, 2017). The above researchers discovered that a significant number of these innovations were still at fledgling stages of development and implementation. On the strength of the foregoing assertion it may be concluded that mobile financial services could be a panacea for the financially excluded populations as well as those with limited avenues to brick and mortar financial services in yet to be developed economies, particularly in Africa. As a result, mobile money platforms are the best inclusion development the previously marginalised citizens needed, which has opened pathways to banking possibilities and inclusive financial services (Shaikh and Karjaluoto, 2015). The utilisation of mobile money service to bridge the gaps in infrastructure that impede the realisation of an all-encompassing financial ecosystem has generated a lot of enthusiasm among scholars and other relevant stakeholders. This has been more pronounced in third world countries, particularly in sub-Saharan Africa (Dermish, Kneiding, Leishman and Mas, 2012), where the rates of financial exclusion are generally high (Mas, 2013). It is for this reason that the research article sought to determine the extent of mobile money access and usage by the rural people in Zimbabwe. Mobile money has brought promise to deal with financial inclusion challenge for disadvantaged communities, hence the need to assess how people in rural communities have embraced the service (Zins and Weill, 2016, Chummun, 2017) .

## **3. OBJECTIVES**

The main objective of this article was to determine access and usage and access levels of mobile money service by the rural people in Zimbabwe.

The following research questions serve the primary objective:

- What is the extent of mobile money service usage in rural Zimbabwe?
- What are the demographic influences on mobile money usage of the rural communities in Zimbabwe?
- What are the determinants of access to mobile financial services?

## **4. MOBILE MONEY**

### **4.1 Defining Mobile Money**

In general terms mobile money refers to any service that allows electronic monetary transactions to be executed over a mobile phone (Chibango, 2014). In developing countries,

such as Zimbabwe and most of its neighbours, mobile money is a financial link between the banked urban and the unbanked rural communities and avoids transport costs involved in moving cash between the metropole and the village (Etim, 2014, Yakub, Bello and Adenuga, 2013). In the past remitting money to the rural areas from the urban areas involved paying bus drivers to take the money or sending someone to hand deliver the money at its intended destinations. The alternative was registered mail, which was also very expensive. Mobile money has gained traction as a cheap way of transacting (Burns, 2015) , especially compared to the traditional financial institutions and traditional ways of sending money. For instance, digital vouchers were found to be more expensive as a way of transacting than mobile money (Research, 2017, Bailey, 2017, Oberländer and Brossmann, 2014). In the SADC region, Zimbabwe is among the countries that have a high penetration of mobile money while Madagascar, Mozambique, Malawi and the Democratic Republic of Congo are some of those countries that are ranked the lowest (Fanta, Mutsonziwa, Goosen, Emanuel and Kettles, 2016). The penetration and widespread use of mobile phones, which is linked to indications of development are central to the growth of mobile money uptake (Carmody, 2013). The mobile wallet that comes with mobile money has also provided a sense of security as the theft of a mobile phone does not always translate into the perpetrator getting access to one's money due to passwords, pins and other security measures that mobile phones come with.

Technically mobile money is simply the provision of financial services to people using a mobile phone (Rea and Nelms, 2017). Di Castri (2013) defined mobile money services as encompassing a broad array of financial services which may be accessed by customers via the mobile phone device. All that one needs to be financially included in the era of mobile money is a mobile device and access to a mobile money agent. When registered and one begins transacting, mobile money is characterised by the following features: balance inquiries, depositing and withdrawal of cash (cash-in and cash-out) respectively; transfer of fund; savings; access to lines of credit; off-shore remittances; payments of bill; and purchase of airtime (Etim, 2014, Khan and Blumenstock, 2017, Economides and Jeziorski, 2017) . In the assessment of unorthodox banking services fulfilment of services and the availability of systems as were identified as the indicators that explain the range of service that the operator may avail and to what extent they are being used (Economides and Jeziorski, 2017). The inclusiveness of the financial system can be evaluated on the basis of the following indicators: risk minimisation, speed of service, ease of use, innovativeness, cost effectiveness, responsiveness, customer education and credit counselling. The distance walked to access the service is also a significant determinant in assessing the effectiveness and inclusiveness of the service (Dixit and Ghosh, 2013, Camara and Tuesta, 2014).

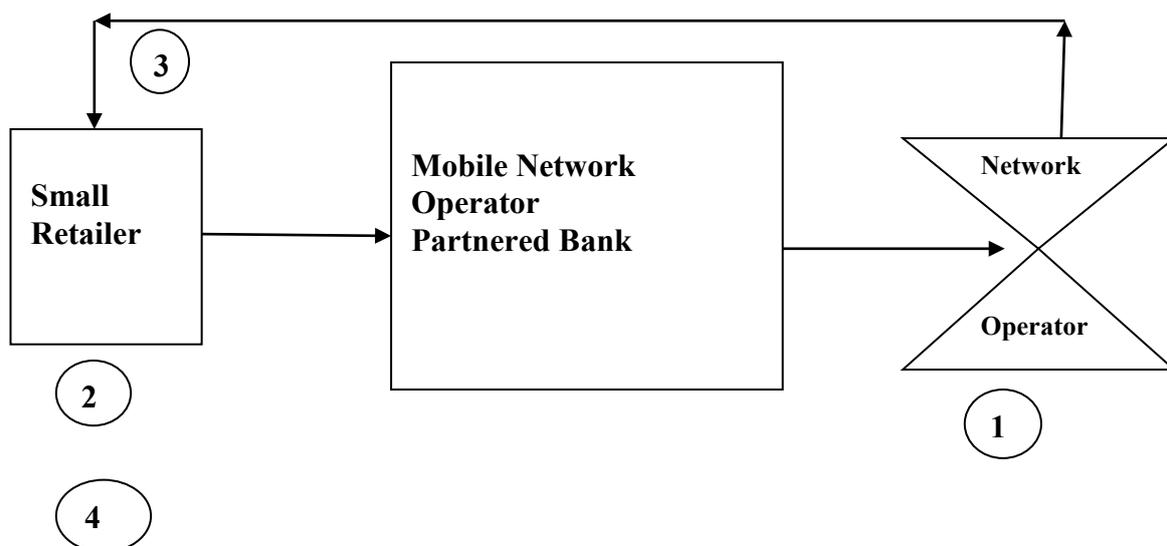
Etim (2014) noted that there was no one size fits all type of mobile money and the supporting structures tend to be country specific. Mobile money offers the potential of financial inclusion for millions of people living in emerging markets that have access to the mobile phone, yet remain excluded from the financial mainstream (Ismail and Masinge, 2012). The previously unbanked and marginalised communities have experienced life changing access to financial services through mobile money. These hitherto marginalised populations present potential markets for the banking sector and telecommunications service providers while offering opportunities for the rural population to access services that were previously regarded a preserve for the urban and the rural elite. Exclusion from financial services is a major challenge for the poor as they are left behind in many developmental processes of their nation states (Zhu, 2014). They do not participate in the economic activities driving the economies of their countries. Nation states, significantly, have begun processes to ensure financial inclusion of the previously unbanked communities (Amidzic, Massara and Mialou, 2014). Banks and insurers, however, have been found to be slow in responding to the needs of the unbanked communities , even if it is their responsibility to come up with products and services for low-income clients (Chummun and Bisschoff, 2014; Mavhiki, Nyamwanza and Shumba, 2015).

In a mobile money system run by a solo mobile network operator, deposits do not attract interest as provided in the banking regulation. The money dispensed and circulating corresponds to the actual funds in the system as it cannot be used for lending or savings purposes by mobile money providers. Through partnerships with banks, mobile money operators are able to provide a full range of financial services like lending, savings and insurance services (Shrier, Canale and Pentland, 2016). This is especially relevant for a country like Zimbabwe where even the banked population finds it difficult to access hard cash from the traditional financial systems, expressing the need for mobile money for transaction purposes. In terms of deposited funds not earning interest, in countries like Zimbabwe, even the money deposited in the bank does not earn interest. Instead, the money in one's account depreciates with time as the banks charge very high service charges and transaction charges and Zimbabwean banks have limited saving options.

#### **4.2 Mobile Money Process**

In Zimbabwe, the most common mobile money products are being offered by mobile money operators (MNOs) in partnerships with banking institutions (Bara, 2013). The Reserve Bank

of Zimbabwe does the ‘licensing’ and the supervision of mobile money since mobile money was regarded as a financial product / service. The central bank uses a bank led model on mobile money products and this implies an indirect relationship between the central bank and mobile network operators. The relationship creates a regulatory challenge for the central bank as it does not have direct authority to supervise mobile network operators. The central bank then relies on the network regulating authority the Post and Telecommunications Authority in Zimbabwe (POTRAZ). According to Bara (2013), PTRAZ allow network operators to offer value-added services where mobile money is regarded as one good example of a value-added service. In terms of regulatory provisions in the telecommunications sector and the financial sector regulations, the provision of mobile money service consequently calls for a partnership between the mobile network operators and banking institution which offer the service. There are steps that must be followed in order for network operators to provide the service to the public and they are illustrated in the flowchart diagram in Figure 1:



**Figure 1: MNO Mobile Money Flowchart**

Source: Adapted from Bara (2013)

The above steps are further elaborated as follows:

**Step 1:** The bank notifies the mobile network operator to create electronic money (e-money).

**Step 2:** A mobile network operator retailer deposits the funds into a pooled account of the MNO partnered bank.

**Step 3:** The mobile network operator assigns the e-money to the merchant’s mobile money account.

**Step 4:** A customer brings cash to a mobile money retailer; the retailer takes the cash and then transfers e-money to the mobile money account of the customer (in this case which is the customer mobile phone number). It is how the customer will get compensated for the cash deposited with the retailer. This process is what is called cash-in. For the customer the reverse process is also possible when the customer intends to withdraw the deposited funds (cash-out).

It must be emphasised that the mobile money system on its own does not create money but the cash in the pooled bank account exactly matches the sum of all the e-money in the system. The value of the digital money is equivalent to the value of the cash assigned to it. As for the bank led mobile money service, it is much easier to regulate it as the primary offering institution is regulated under the Banking Act. The banking institutions are mandated to apply to the central bank in order to offer such a service (Bara 2013).

## 5. METHODOLOGY

The study employed a quantitative approach defined as a 'research method that involves statistical or numerical data to systematically investigate a social phenomena (Watson, 2015). The method was chosen its ability to analyse data for trends and relationships.

### 5.1 Study population

The target population comprised of all the households that use mobile money within the chosen wards in the Kwekwe rural district as shown in Table 2 :

**Table 2: Target Population for the study**

WARD NUMBER	NUMBER OF HOUSEHOLDS(HH)
WARD 10	1297
WARD 11	1367
WARD 13	1282
WARD 15	1450
WARD 16	817
WARD 21	2045
<b>TOTAL</b>	<b>8258</b>

Source: ZIMSTAT (2013)

In the Table 2 above a target population size for this study was deemed to be 8258 households.

## 5.2 Sampling procedure

A multi-stage random sampling technique was used for this study; where three sampling stages were employed to draw research participants. The first stage entailed the selection of the 6 wards from a total of 22 wards in the Kwekwe rural districts. The second stage involved choosing 3 villages per ward and a total of eighteen villages were selected from the 6 wards. The sampling procedure for the villages is supported by Cochran (1977). The third and last stage involved the selection of 367 households from the selected villages making up the sample size for the study. Using a sampling procedure known as the probability-proportional-to-estimated-size (PPES) sampling, a fixed number of households per sampled PSU was systematically chosen. In each village, the household list (names) were obtained from the village heads, the households were assigned numbers from say 1-40. The sample size was determined from the study population using a formula developed by Krejcie and Morgan (1970) and it was deemed adequate.

## 5.3 Instrument Design

A questionnaire was employed as the main data collection instrument. The instrument was adapted from Chinakidzwa, Mbengo and Nyatsambo (2015) and Wamuyu (2014). The final questionnaire was structured to include the following main sections: demographic profile, mobile money access, mobile money uses and former methods of funds transfer and storage. Finally data was collected over a period of three months.

## 6.0 RESULTS

This section of the article presents the results of the study and provides an in-depth analysis and discussion of the research findings.

### 6.1 Sample demographics

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<sup>1</sup> Krejcie, R.V. & Morgan, D.W. 1970. Determining sample size for research activities. *Educational and psychological measurement*, 30, 607-610. The sample size of 367 was calculated as follows:  $S = \frac{X^2NP(1-P)}{[d^2(N-1) + P(1-P)]}$ . Where S= Sample size, N = Population size,  $X^2$  = Value of Chi-Square @ d. f. = 1 at the desired confidence interval from the tables, P = Population proportion (assumed to be 0.5), d = degree of accuracy. Given that N = 627171,  $X^2 = 2.71$  @ 10% confidence interval, P = 0.5 and d = 0.1, then the sample size is  $S = \frac{X^2NP(1-P)}{[d^2(N-1) + P(1-P)]} = \frac{2303003.15}{6272.3775} = 367$ .

The demographic profile of the respondents such as gender, marital status, educational level, age and income status is shown in table 3 (see appendix I). The results showed a balanced gender profile, with the majority of the respondents aged between 36 and 50 years. Child headed families were very insignificant among the rural households. The majority of the respondents were married. On the level of education, the least attained education level was the primary education implying high literacy level. The findings are consistent with the widely reported view that Zimbabwe has very high literacy levels when compared to other countries in the region. Due to the economic meltdown the level of employment reported was very low as shown in Table 3. The presented findings imply that there are a few employment opportunities in the rural areas hence most people would migrate to urban areas to seek for job opportunities. The results were very consistent with economic figures on the levels of unemployment (Zimstat 2013).

**Table 3: Demographic Profile**

<b>DEMOGRAPHIC</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Gender				
Male	173	49.300	49.300	49.300
Female	178	50.700	50.700	100.000
Total	351	100.0	100.0	
<b>Age of Respondents</b>				
<21 YEARS	10	2.800	2.800	2.800
21-35 YEARS	71	20.200	20.200	23.100
36-50 YEARS	175	49.900	49.900	72.900
51 YEARS AND ABOVE	95	27.100	27.100	100.000
Total	351	100.0	100.0	
<b>MARITAL STATUS</b>				
Married	259	73.800	73.800	73.800
Divorced	14	4.0	4.0	77.800
Widowed	48	13.700	13.700	91.500
Single	30	8.500	8.500	100.000

Total	351	100.0	100.0	
<b>LEVEL OF EDUCATION</b>				
Primary	72	20.5	20.5	20.500
Secondary	229	65.2	65.2	85.800
Tertiary	22	6.3	6.3	92.000
Other	28	8.0	8.0	100.000
Total	351	100.000	100.000	
<b>OCCUPATION</b>				
Employed	30	8.5	8.500	8.500
Self Employed	181	51.600	51.600	60.100
Unemployed	130	37.000	37.000	97.200
Pensioner	10	2.8	2.8	100.000
Total	351	100.0	100.0	

Source: Primary Data

## 6.2 Mobile Money access and usage

Data relating to previous methods of access to financial services such as bank account ownership, former methods of sending money and storage of money is presented in the Table 4. In addition, mobile money access and usage data is presented. The study findings show that prior to the adoption of mobile money services rural individuals used both informal and formal channels of sending money. Sending money using bus drivers was the most popular method as indicated by a higher response followed by registered letters. On the former methods of storing money, the findings showed a similar trend with former methods of sending money. The traditional informal methods such as storing under the mattress or using a relative were very popular with rural households confirming findings from previous studies (Lwanga Mayanja and Adong, 2016, Munyegera and Matsumoto, 2016) .

With regards to bank accounts, the response point to a very large number of rural people who were financially excluded if one were to only use bank account ownership as an indicator of financial inclusion. On the other hand, the respondents were investigated on mobile phone ownership and mobile money registration. The results were revealing, as almost all the respondents indicated that they appreciated the use of mobile money service. This was reflective of the national mobile phone coverage as indicated by research

(Asongu, 2013). As expected mobile money adoption was very high in the rural areas. Clearly it shows that if properly established, mobile money use can provide solutions to financial inclusion problems that have bedevilled the rural areas for a very long time. These findings are consistent with the previous research findings by Munyegera and Matsumoto (2016).

In the assessment of frequency of usage, most (73.8 %) of the respondents occasionally used the mobile money services while some reported that they used it on a monthly basis. Weekly and daily usage was very negligible accounting for just under 3%. The findings reflect on the remittances received. Previous studies indicated that most of the rural household depended much on the remittances received from friends/relatives who live either in the urban area or abroad (Munyegera and Matsumoto, 2014).

**Table 4: Results of mobile access and usage**

<b>Bank Account</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Yes	45	12.800	12.800	12.800
No	305	86.900	86.900	99.700
20	1	.300	.300	100.000
Total	351	100.0	100.0	
<b>Purpose of Account</b>				
Salary	14	4.0	4.0	4.000
Savings	9	2.600	2.600	6.600
Both	22	6.300	6.300	12.800
Not applicable	306	87.200	87.200	100.000
Total	351	100.0	100.0	
<b>Former Methods of Remitting</b>				
Bus Driver	206	58.700	58.700	58.700
Bank	24	6.800	6.800	65.500
Post	109	31.100	31.100	96.600
Western Union	12	3.400	3.400	100.000

Total	351	100.000	100.000	
<b>Mobile Phone Ownership</b>				
Yes	345	98.300	98.300	98.300
No	6	1.700	1.700	100.000
Total	351	100.000	100.000	

<b>Registered MM User</b>				
Yes	339	96.600	96.600	96.600
No	12	3.400	3.400	100.000
Total	351	100.000	100.000	
<b>Service Provider</b>				
Bank	1	.300	.300	.300
Mobile Operator	349	99.400	99.400	99.700
Not Applicable	1	.300	.300	100.000
Total	351	100.000	100.000	
<b>Frequency of use</b>				
Daily	1	.300	.300	.300
Weekly	10	2.800	2.800	3.100
Monthly	81	23.100	23.100	26.200
Occasionally	259	73.800	73.800	100.000
Total	351	100.000	100.000	
<b>Distance from the nearest Agent</b>				
<1km	45	12.800	12.800	12.800
1km-2km	53	15.100	15.100	27.900
2km-5km	107	30.500	30.500	58.400
5km-10km	28	8.000	8.000	66.400
>10km	118	33.600	33.600	100.000
Total	351	100.000	100.000	

<b>Former methods of storing money</b>				
ISAL	43	12.300	12.300	12.300
Bank	51	14.500	14.500	26.800
Under the mattress	245	69.800	69.800	96.600
Relative	11	3.100	3.100	99.700
Not Applicable	1	.300	.300	100.000
Total	351	100.000	100.000	
<b>Link ISAL with Mobile Money</b>				
Yes	34	9.700	9.700	9.700
No	11	3.100	3.100	12.800
Do not know	2	.600	.600	13.400
Not applicable	304	86.600	86.600	100.000
Total	351	100.000	100.000	

Source: Primary Data

The respondents were also asked to indicate the distance they walked to the nearest mobile money agent. Distance walked was very important to this study as the exclusion of the rural majority from formal banking services was largely premised on the distances that they had to travel to access banking infrastructure, which is largely in the urban areas as indicated by research (Mas, 2013). The results showed that 58.4% of the respondents walk distances of between 0 (zero) to five kilometres to access mobile money service to either send or receive money. Eight percent (8%) walk between 5 (five) km and 10 km to get the service while 33.6% of the respondents indicated that they travel distances greater than 10km to access the nearest mobile money service. It is important to indicate that the distances (0 (zero) to 10km) walked by the majority of the respondents to the nearest mobile money service provider are the same distances the rural folk have always walked to the nearest clinics, schools, shopping centres, dip tanks and police station among other critical services accessed by the rural folk. Mobile money users were grouped into three categories based on the amount of money received, i.e. small, moderate, high and large net receivers of remittances. Their remittance frequencies were presented together with distance walked to the nearest mobile money agent. The results are shown in Table 5.

**Table 5: Average amount (AMR) versus distance walked to a mobile money agent**

		Distance walked to the nearest mobile money agent					Total
		<1km	1km-2km	2km-5km	5km-10km	>10km	
AMR	Small AMR	18	14	33	9	31	105
	Moderate AMR	12	22	34	8	38	114
	High AMR	8	10	23	7	37	85
	Large AMR	7	7	17	4	12	47
Total		45	53	107	28	118	351

Source: Primary Data

The results in Table 5 showed that the majority of the mobile money users received small to moderate amounts of money. In terms of distances a significant number of users in different categories still travelled long distances (>10km) to access their mobile financial services.

In contrast to traditional financial services, there has been a great improvement in accessing financial services with the emergence of mobile money compared to bank access in terms of distance to the nearest bank branch for rural people. Most banks and financial institutions are located in urban centres and the least distance to the nearest branch is 60km. For this reason it can be seen that mobile money has greatly reduced the distance to the nearest bank as the majority of the respondents walk distances less than 5 (five) km. There is potential to further reduce distances and improve access to mobile money if agents were to be increased. There was an attempt to measure an association between the amount received and the distance walked to the nearest mobile money agent. The results of the Chi-square test are presented in the Table 6 below:

**Table 6: Chi-Square Tests of distance and amount received**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.100 <sup>a</sup>	12	.607
Likelihood Ratio	9.888	12	.626
Linear-by-Linear Association	.707	1	.401
N of Valid Cases	351		

Source: Primary Data

The results showed that there was no association between distance and amount received as indicated by a chi-square value of 10.100 and a p-value of 0.607. The cost of establishing a mobile money agent is far less compared to establishing a bank branch. In some instances, it costs nothing as these agents can be hosted within a supermarket or a store. Similar observations were made by Munyegera and Matsumoto (2016) who noted that mobile money had greatly reduced distances walked by mobile money users to access financial services in Uganda. Consequently mobile money technology service has the potential to bridge the gap between the disadvantaged individuals who have less access to formal financial services (Ky, Rugemintwari and Sauviat, 2016). The results demonstrated that the poor, through mobile money service, now have access to financial services. This state of affairs has the potential for the involvement of rural communities in national economic activities to a larger extent as they now have access to the central driver of the economy; financial services.

### 6.3 Mobile money service usage

Table 7 presents the mean values on the commonly used mobile money services.

**Table 7: Mobile Money Uses**

Mobile Money Uses	N	Minimum	Maximum	Mean	Std. Deviation
To receive money	351	1	4	1.810	.473
To safely store funds	351	1	5	2.090	.759
To send money	351	1	5	2.330	1.050
To top up airtime	351	1	5	2.340	1.102
To pay bills	351	1	5	3.520	1.050
To pay school fees	351	1	5	3.680	.9140
Valid N (listwise)	351				

Source: Primary Data

The results showed that for the rural households, mobile money was used to receive money from friends and relatives either in the urban centres or abroad. This is in line with the growth of both rural to urban migration and migration into the diaspora, which have been on a steady increase since the earliest signs of the depreciation of the Zimbabwean economy two decades ago. The respondents also indicated that they generally use mobile money service as a fund storage facility as shown by a mean value of 2.09. Sending money and airtime top

up were also shown as the services most popular with mobile money users. With regards to bill payment and school fees payment, mobile money users revealed that they were not using the services as shown by mean values 3.52 and 3.68 respectively. The possible explanation could be that most of the businesses operating in rural communities have not yet embraced mobile money payment systems. The businesses in rural communities are only just starting to embrace the use of mobile money as an official transacting channel.

The data on usage (receive money, pay school fees, airtime top-up, funds storage and bill payment) was further transformed to create categories to measure mobile money uses by rural communities. The usage categories were labelled as low user, moderate user and high users. The results are presented in the table 8 :

**Table 8: Mobile Money Usage Category**

Usage Levels		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low User	58	16.500	16.500	16.500
	Moderate User	222	63.200	63.200	79.800
	High User	71	20.200	20.200	100.000
	Total	351	100.000	100.000	

Source: Primary Data

Generally, most users of the mobile money services were moderate users with a 63.2% usage rate. Again, there was an attempt to test for an association between usage and the level of education of users. Before carrying out a Chi-square test, a crosstab was used to present data on the level of education and the mobile money usage (MMU) category. The crosstab is presented in Table 9:

**Table 9: Level of education and MMU CATEGORY**

Level of Education		MMU_CATEGORY			Total
		Low User	Moderate User	High User	
Level of education	Primary	28	40	4	72
	Secondary	20	159	50	229
	Tertiary	1	8	13	22
Total		49	207	67	323

Source: Primary data

In terms of user distribution, the majority (229) of users attained a secondary education level, while most users belonged to the moderate user category. Furthermore, a Chi-square test was done and the results of a Chi-square test are presented in the Table 10 :

**Table 10: Chi-Square Tests of Education and usage**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	62.803 <sup>a</sup>	4	.000
Likelihood Ratio	55.007	4	.000
Linear-by-Linear Association	48.834	1	.000
N of Valid Cases	323		

Source: Primary data

On the association between usage and level of education, the results showed that level of education has a strong bearing on the usage of mobile money services with a Pearson Chi-square value of 62.803 at the p value of 0.000. The results show that higher education implies more usage of mobile money services.

#### 6.4 Discussion of results

On the use of mobile money service, the article noted that there was a major change from traditional methods of remitting funds (sending money through bus drivers and registered postal mails) and similarly a change from informal methods of saving/storing funds (under the mattress and through relatives) was noted. The use of mobile money services greatly improved the way rural people transact and save money, a shift that was observed elsewhere by Susan (2016) and Munyegera and Matsumoto (2016). The findings pointed to a high adoption and use of mobile money by rural communities and the high access levels

could be attributed to the low cost of the service, convenience as the transactions can be conducted anywhere, anytime, and the wide mobile phone network coverage (Johnson 2016). The advent of mobile money service led to a shift in remittance trends were in case of emergency or hardships members of the family living in urban areas or abroad could send money to their relatives to deal with an emergency. This could be the same reasons for the parents or relatives in the rural areas sending money to a child/relative in need in town, however, the most prevalent trend in remittances was that people in rural areas are characterised as net receivers of funds transfers. The trend can be explained by the demographic characteristic of the rural users of the mobile money service. Generally, these are unemployed or regarded as low-income earners who rely on family members and relatives to supplement their income (Jack and Suri, 2014) Their sources of income are limited, either they receive funds from family members, or when they have sold some livestock. The use of mobile money for other services such as airtime top-up, payment of bills and school fees was relatively low. Most of these services were less used, with regards to fees payment most institutions had not yet adopted or incorporated this in their fees payment methods and hence the low usage of the service in this regard.

The mobile money service has greatly reduced the distances travelled by rural communities to access financial services as mobile money agents are almost ubiquitous (Mas, 2013, Ndlovu and Ndlovu, 2013) as the majority of the rural users of the service were now walking distances less than 10km. It can be noted that in some areas rural people are still walking long distances to access mobile money service. The extensive use of the mobile money service was also associated with literacy levels, with those with high literacy level being the moderate users of the service. Users with secondary education were identified as the moderate users, an indication that the level of education was a significant determinant on the use of mobile money service (Munyegera and Matsumoto, 2016, Litondo and Ntale, 2013).

## **7. CONCLUSION**

The study concludes that there is a moderate usage of mobile money service measured on a low-high usage scale. The usage was high for services such as remittances (sending and receiving money). Education has a strong bearing on the usage of mobile money services, Users with tertiary education used all the service available services provided by mobile money service, however there is still room for optimum usage of the service by those with least level of education. The last objective of the study sought to determine the access of mobile money level by rural communities. Distance walked by household to the nearest mobile money service used to measure accessibility. Therefore, we can conclude that

though financial access has greatly improved, there is need to establish more mobile money services at distances of less than 10km.

## **8. MANAGERIAL IMPLICATIONS**

This study has sought to determine usage and access levels of mobile money service by the rural people in Zimbabwe. Resultantly, the managerial implications are that service provider managers can increase the number of mobile money agents which can assist the rural people in travelling shorter distances to access mobile money. The results indicated that a number of rural users still travelled distances of more than two (2) kilometres. On mobile money use, service providers can improve the sending options menu to include the reasons for sending money both for individual and business customers. The options will help to generate time series data that can be used for meaningful analysis possibly noting changes and trends due to rich data provided. On the government policy section, a policy statement crafted by the state is more likely to encourage businesses, government institutions and agents operating in rural communities to embrace mobile money service especially for payment for services rendered to their customers.

## **9. SUMMARY**

The article provides the access and usage patterns of the mobile money service which in turn becomes the basis for assessing the financial needs of rural communities and consequently how to address the financial inclusion challenge faced by these communities. Literature review had pointed to a gap in terms of relating mobile money, micro-financial services and finance for the poor. In summary, the article has determined the extent of usage of mobile money by rural people and then identifies the mobile money service functions that address their needs.

### **References**

- Amidzic, G., Massara, A. & Mialou, A. 2014. Assessing countries' financial inclusion standing. *A new Composite Index*.
- Asongu, S.A. 2013. How has mobile phone penetration stimulated financial development in Africa? *Journal of African Business*, 14, 7-18.
- Bailey, S. 2017. Humanitarian cash transfers in the Democratic Republic of Congo Overseas Development Institute. .
- Bara, A. 2013. Mobile money for financial inclusion: policy and regulatory perspective in Zimbabwe. *African Journal of Science, Technology, Innovation and Development*, 5, 345-354.
- Burns, S. 2015. Mobile money and financial development: The case of M-PESA in Kenya. *Available at SSRN 2688585*.

- Camara, N. & Tuesta, D. 2014. Measuring financial inclusion: A multidimensional index. *BBVA Research Paper*.
- Carmody, P. 2013. A knowledge economy or an information society in Africa? Thintegration and the mobile phone revolution. *Information Technology for Development*, 19, 24-39.
- Chibango, C. 2014. Revolution Mobile Money: An Opportunity for Financial Inclusion in Africa. *The International Journal of Humanities & Social Studies* 2, 59-67.
- Chinakidzwa, M., Mbengo, P. & Nyatsambo, M. 2015. Mobile money usage in rural areas of Zimbabwe - case of Mudzi District. *International Journal of Scientific & Engineering Research*, 6, 128-132.
- Chummun, B.Z. (2017) Mobile microinsurance and financial inclusion: the case of developing African countries. *Africagrowth Agenda journal* 2017 (Jul/Sep 2017), 12-16. ISSN: 1811-5187
- Chummun, Z.B., and Bisschoff, C.A. (2014) A Theoretical Model to Measure the Business Success of Micro-insurance (MI) in South Africa. *Journal of Economics*, 5 (1), 87-96
- Dermish, A., Kneiding, C., Leishman, P. & Mas, I. 2012. Branchless and mobile banking solutions for the poor: a survey of the literature.
- Di Castri, S. 2013. Mobile money: Enabling regulatory solutions. *Available at SSRN 2302726*.
- Dixit, R. & Ghosh, M. 2013. Financial inclusion for inclusive growth of India-A study of Indian states. *International Journal of Business Management & Research*, 3, 147-156.
- Economides, N. & Jeziorski, P. 2017. Mobile money in Tanzania. *Marketing Science*, 36, 815-837.
- Etim, A.S. 2014. Mobile banking and mobile money adoption for financial inclusion. *Research in Business and Economics Journal*, 9, 1.
- Fanta, A., Mutsonziwa, K., Goosen, R., Emanuel, M. & Kettles, N. 2016. The role of mobile money in financial inclusion in the SADC region: Evidence using FinScope Surveys. Policy research paper No. 03/2016, FinMark Trust.
- Isaac, J.T. & Sherali, Z. 2014. Secure mobile payment systems. *IT Professional*, 16, 36-43.
- Ismail, T. & Masinge, K. 2012. Mobile banking: Innovation for the poor. *African journal of science, technology, innovation and development*, 4, 98-127.
- Jack, W. & Suri, T. 2014. Risk sharing and transactions costs: Evidence from Kenya's mobile money revolution. *American Economic Review*, 104, 183-223.
- Khan, M.R. & Blumenstock, J. 2017. Determinants of Mobile Money Adoption in Pakistan. *arXiv preprint arXiv:1712.01081*.
- Krejcie, R.V. & Morgan, D.W. 1970. Determining sample size for research activities. *Educational and psychological measurement*, 30, 607-610.
- Kufandirimbwa, O., Zanamwe, N., Hapanyengwi, G. & Kabanda, G. 2013. Mobile Money in Zimbabwe: Integrating Mobile Infrastructure and Processes to Organisation Infrastructure and Processes. *Online Journal of Social Science Research*, 2, 92-110.
- Ky, S., Rugemintwari, C. & Sauviat, A. 2016. Does mobile money affect saving behavior? Evidence from a developing country.
- Litondo, O. & Ntale, F. 2013. Determinants of mobile phone usage for e-commerce among micro and small enterprises in the informal sector of Kenya. *International Journal of Applied Science and Technology*, 3 (6): 16, 21.

- Lwanga Mayanja, M. & Adong, A. 2016. A pathway to financial inclusion: mobile money and individual Savings in Uganda.
- Mas, I. 2013. Blog Posts on Financial Inclusion, Mobile Money and Branchless Banking: 2013. *Mobile Money and Branchless Banking*.
- Mavhiki, S., Nyamwanza, T. & Shumba, L. 2015. Impact of Mobile Banking on Traditional Banking Practices in Zimbabwe *International Journal of Economics, Commerce and Management*, 3, 1-13.
- Munyegera, G.K. & Matsumoto, T. 2014. Mobile money, remittances and rural household welfare: Panel evidence from Uganda. *Tokyo: GRIPS*.
- Munyegera, G.K. & Matsumoto, T. 2016. Mobile money, remittances, and household welfare: panel evidence from rural Uganda. *World Development*, 79, 127-137.
- Ndlovu, I. & Ndlovu, M. 2013. Mobile banking the future to rural financial inclusion: Case study of Zimbabwe. *IOSR Journal Of Humanities And Social Science*, 9, 70-75.
- Oberländer, L. & Brossmann, M. 2014. Electronic delivery methods of social cash transfers. *Discussion Papers on Social Protection*. Available online: <https://www.giz.de/expertise/downloads/giz2014-en-electronic-delivery-methods-of-social-cash-transfers.pdf> (accessed on 26 February 2015).
- Rea, S.C. & Nelms, T.C. 2017. Mobile money: the first decade. *Institute for Money, Technology and Financial Inclusion Working Paper*, 1.
- Research, A.I.F. 2017. Humanitarian Cash Transfers in the Democratic Republic of the Congo: Evidence from UNICEF's ARCC II Programme. Washington DC: AIR.
- Reserve Bank of Zimbabwe 2014. Monetary Policy Statement.
- Shaikh, A.A. & Karjaluoto, H. 2015. Mobile banking adoption: A literature review. *Telematics and informatics*, 32, 129-142.
- Shrier, D., Canale, G. & Pentland, A. 2016. Mobile money & payments: Technology trends. *Massachusetts Inst. Technol.*
- Thulani, M., Chitakunye, P., and Chummun, BZ., 2014. Mobile money as a strategy for financial inclusion in rural communities. *Mediterranean Journal of Social Sciences*. 5(25), pp.216-224.
- Wamuyu, P.K. 2014. The role of contextual factors in the uptake and continuance of mobile money usage in Kenya. *The Electronic Journal of Information Systems in Developing Countries*, 64, 1-19.
- Watson, R. 2015. Quantitative research. *Nursing Standard (2014+)*, 29, 44.
- Yakub, J., Bello, H. & Adenuga, I. 2013. Mobile money services in Nigeria: An inquiry of existing models. *International Journal of Economics and Management Sciences*, 2, 94-105.
- Zhu, H. 2014. The Rise of Mobile Money in Kenya: The Changing Landscape of M-PESA's Impact on Financial Inclusion. . Trinity College of Duke University.
- Zins, A. & Weill, L. 2016. The determinants of financial inclusion in Africa. *Review of Development Finance*, 6, 46-57.



