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Mobile Money as a Financial Inclusion Instrument: A Case of Micro-Entrepreneurs in the Central Business District of Lusaka

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Abstract

The aim of this paper is to profile the state of mobile money financial inclusion/exclusion among micro-entrepreneurs (traders) in the Central Business District. This paper uses a case study approach and is based on mono method quantitative approachAn assessment of mobile line ownership as a gateway to one aspect of financial inclusion shows that majority of micro entrepreneurs n = (88.4%) were Airtel subscribers and a minority n = 93 (31.6%) were Zamtel subscribers The number of lines in possession varied in the sample with n = 38 (12.9%) maintaining three lines being in the minority group and those maintaining two lines n = 161 (54.8%) were in the majority. There was no statistically significant difference in the number of lines in possession by gender as p was > 0.05 (0.397). Age as well did not show any significant difference as p was > 0.05 (0.682). Micro entrepreneurs were able to use mobile money services once in a week and almost every day. Use was influenced by the facts that was it less expensive to deal with the mobile money service provider, customer trust of the mobile money financial services provider was more than other service sources and the micro entrepreneurs had the money a priori to do business. The paper's call to action is for the government to institute holistic financial frameworks that would cover the micro level by ensuring that mobile money service providers make their products more accessible, user friendly, quality and continue to be less expensive for the usage of not only micro entrepreneurs. There is need to expand the use of mobile money financial services technology to deliver financial services to enhance inclusion. This may require adding more features on mobile ups and firms owning mobile money financial services to consider franchising. We propose context specific products that could be appreciated by people in the Progress out of Poverty Index 1 and 2 categories that includes micro traders and this would require evidence based financial solutions. Hence more research is being proposed in this area.

Keywords: *Profile, Mobile Money, Financial Inclusion, Micro Entrepreneurs, Central Business District*

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Introduction

Financial inclusion (FI) is considered a key enabler to economic growth and therefore placed high on the policy agenda of most developing countries and has been identified as one of the growth-enhancing factors for developing countries (Abubakar et al., 2020). Due to its multidimensional nature and the existence of various approaches in different jurisdictions (Sahay et al., 2015; Sanderson et al., 2018), it is rather difficult to profile FI. The incidence of financial exclusion is more severe in developing countries and that of African states is peculiar. According to Isern et al. (2009), notwithstanding the global expansion in the financial

sector, it is still below average in Sub-Saharan Africa. Specifically, and without prejudice to the on-going financial sector reforms in Zambia, her financial sector is apparently still considered very weak and shallow. The 2015 and 2020, FinScope studies tend to portray a positive outlook in terms of FI and yet most Zambians still lack access to and use of financial services. The 2020 FinScope survey indicated that the level of financial inclusion rose to 69.4 percent from 59.3 percent recorded in 2015, largely because of policy reforms and interventions which led to the increased uptake of digital financial services. The 2020 FinScope survey posits that 83.8% of adults in urban areas are financially included compared to 56.9% of their rural counterparts and that formal financial inclusion increased to 61.3% from 38.2% in 2015.

In comparison to other African countries like Kenya, Tanzania and South Africa, Zambia has the lowest percentage of people who are financially excluded in absolute terms. Despite the existence of policies on financial inclusion in Zambia, the 2015 and 2020 FinScope studies showing progress in uptake of digital financial services, the survey has not qualified who have been included in urban areas during this. Given that the proportion of actors in the financial market appears to be increasing according to the 2015 FinScope survey, we are holding the assumption that the excessive trading seen among micro entrepreneurs is mere irrational 'noise' trading and it does not form part of those who are financially included whether digitally or not. A corollary is that there must either be irrational non-included micro-entrepreneurs in the market or rational micro-entrepreneurs with aberrations who have not been financially included. Although the 2020 FinScope statistics appear to be encouraging, research therefore ought to provide more details than the current surface evidence. The aim of this paper is to profile the state of mobile money financial inclusion/exclusion among micro-entrepreneurs (traders) in the Central Business District.

Justifying the Case of Mobile Money

The rise in formal inclusion from 2015 to 2020 was mainly attributed to a surge in penetration of mobile money services, which more than quadrupled to 58.4 percent from 14.0 percent in 2015 (FinScope, 2020) and this was mainly attributed to the increased uptake of mobile money services, particularly by females. It is worthwhile to profile this use especially among micro entrepreneurs noting that the 2020 FinScope study did not being out barriers or facilitators.

It is not in dispute that mobile money has profoundly transformed the financial space of most low- and middle-income economies in the past decade and a half (Shirono et al., 2021). Mobile money has been running parallel to the traditional banking sector. Mobile money institutions are now perceived as branchless financial institutions. They provide traditionally unbanked and underserved populations providers of financial services as they are a convenient means to conduct financial transactions while at the same time promoting digital access to formal financial services and furthering financial inclusion (Nelson and Perli, 2007; Donovan, 2012; Babajide et al., 2015; Demirguç-Kunt et al., 2018; Espinoza-Vega et al., 2020)..

Empirical research has shown the existence of a relationship between mobile money and financial inclusion. There are indications that individuals and households who have access to mobile money tend to enjoy increased safety, which, in turn, reinforces their commitment to boost savings (Mbithi and Weil, 2011; Honohan and King, 2012; Shem et al., 2012; Apiors and Suzuki, 2018; Demirguc-Kunt et al., 2015) and manage adverse shocks, including job loss, death of livestock and problems with farm harvest (see Jack and Suri, 2014; Munyegera and Matsumoto, 2018). On the contrary, without access to finance, individuals and households may suffer deprivation, resulting from increased income inequality and a lack of social protection (Arora, 2014). There are also benefits arising from use of mobile money services. Mobile money transforms access to finance, mobile money offers its users a considerable number of benefits. Among other advantages, mobile money is secure and affordable, lowers transaction costs, reduces vulnerability to the risk of loss, theft, and other financial crimes, and promotes economic empowerment by enabling asset acquisition (Suri et al., 2012).

Study Area

The CBD which was the focus of the study is located in the heart of the City of Lusaka and one trading place of two in the CBD has been considered for this study and this Lusaka Main City Market. The choice of this area is based on the fact that we had observed that this is the busiest place where we had a higher likelihood to get a wide range of micro entrepreneur characteristics and that the setting has a larger population for the type of study we intended to undertake. The Central Business District (CBD) of Lusaka was considered as the research setting because its composition of business actors were heterogeneous, and it was a fast-growing business segment of the City's economy. The setting was driven mainly through entrepreneurship. The CBD is a hive of economic activity embracing trading, service delivery and manufacturing *inter alias*.

Population and Sampling

We designed the study to focus on the informal business sector by enlisting women and men who had stalls in the CBD. These were categorized as low income earners who fall in the Progress out of Poverty Index 2 (PPI 2) category. This is the category the 2020 FinScope survey categorises as a poor adult population. Three rapid appraisal visits were undertaken to explore infrastructure features, demographic characteristics, and to observe economic activity. These visits were necessary to formulate a logistical plan as we needed to gain some perspective of the physical scale of the study site at ground level. The transect walk was necessary to determine the required logistics and outline probable logistic sampling and data collection challenges recognising the fact the CBD had diverse informal activities which we would encounter.

This population of micro-entrepreneurs is not wholly specifiable and is temporarily independent. It therefore demanded that we draw a map of stalls following an exploratory transect walk to determine the sample size and the distribution of stalls. Since stalls were unnumbered, based on the sampling frame we were able to map these stalls and assign them numbers following the transect walk. Yamane Taro's (1967) sampling formula was applied to determine the sample size. The sample population was 2010 stalls and the precision

was set at 5%. In this case, the ideal sample was estimated to be 333. We then employed systematic random sampling technique of micro-entrepreneurs to select respondents for this study. We used the interval one every 6th stall to enlist respondents for this survey.

All potential respondents were approached individually to ascertain their willingness to participate in the survey. This approach was considered to be appropriate for exploration and where our aim was to obtain a wider understanding of the subject under inquiry. We waited when permitted to collect the questionnaire. In most instances we picked the questionnaire after five days. For some, we filled the responses as they answered.

In total, we collected 306 responses. Out of these, 294 responses were utilized for data analysis. These were usable responses, as the other eleven were removed due to a large proportion of incomplete responses. The response rate was high and acceptable. Since we were primed to use regression analysis to account for the determinants, when performing regression analysis as analytical tool, the desired sample size ought to meet the minimum sample size as recommended by various scholars (see Hoyle, 1999; Tabachnick and Fidell, 2007; Mwanza, 2016). The recommended minimum sample size of 50 is at least suitable to perform regression analysis when using Likert items, as there are five arrows pointing to a latent construct (Marcoulides and Saunders, 2006 Marcoulides et al., 2009). However, a recommended sample size between 200 to 300 indicates good sampling for any standard statistical analysis (Tabachnick and Fidell, 2007). Thus, the current study meets the sample size based on standard recommendations.

Data Collection tools

One data collection tool that was used in this study was a survey standard structured questionnaire. Questions related to their individual, social and economic contexts, within which the micro entrepreneurs operated. These questions accommodated the constructs from the Technology Acceptance and Adoption Model (Venkatesh and Davis, 2000; Vankatesh et al., 2012) and Barrier Models (Egede, 2006; Gupta, 2015). We used Likert construct items to measure our items. We distributed the survey questionnaire with the help of the local market leadership.

Content and Development of Tool

Data elicited through survey questionnaires was used mainly in this study. Added to obtaining data on micro-entrepreneurs' demographic profile, the issues covered in the questionnaire focused mainly on use of financial services, and the factors impeding (barriers) financial inclusion. These were developed inductively from the literature as there is no standard financial inclusion scale for Zambia. Thus, the four important elements or dimensions of financial inclusion relating to usage were used in this study. To assess the extent of usage of the formal financial services by individuals, we measured FI using the dimensions for mobile money based on using mobile money services and the indicator variables (see Huges and Lonie, 2007; McKay and Pickens, 2010; Fathallah et al., 2011; Aron, 2018) and these were:

a) Using mobile money to make payments to people
b) Using mobile money to withdraw money from my bank account
c) Using mobile money to receive money from people
d) Using mobile money to buy/purchase/procure goods and services
e) Using money save money

Each variable was measured as follows: 1 for never, 2 for, Once in a while, 3 for Once in a fortnight, 4 for Once in a week and 5 for almost every day in a week. Given the five variables, these mobile money transactions usage indicators were further computed to determine composite scores. A composite score ≥ 15 was graded as high degree of usage of services and if it was less than 15, use was graded as low degree of usage of services. Barriers to financial inclusion in terms of mobile money were operationalised in ways as constraints to ascertain limiting use of a service as follows:

a) Having other sources to get credit and one does not need a mobile money (Demand related barrier).
b) Not appropriately served by the mobile money as compared to alternative financial providers. (Supply related barrier).
c) The mobile money is far from where I do business and I have other sources. (Supply related barrier).
d) Mobile money have high lending interests and I have other sources. (Supply related barrier).
e) Mobile money have stiffer/cumbersome conditions to do business with than other sources. (Supply related barrier).
f) I find it more expensive to deal with the mobile money and opt for other sources. (Supply related barrier).
g) I trust mobile money less than other sources (Supply related barrier).
h) I do not have that money that would require me dealing with the mobile money. (Demand related barrier).
i) My religion prohibits dealing with the mobile money. (Demand related barrier).
j) I have other methods of saving and growing my money other than mobile money. (Demand related barrier).
k) The need for collateral to get a mobile money loan would/makes make it difficult for me to use the service. (Supply related barrier).
l) The non-availability of mobile money in my area would/makes make it difficult for me to use the service. (Supply related barrier).
m) The reliability of the mobile money would/makes make it easy (Supply related barrier).
n) The flexible terms of the mobile money would/makes make it easy (Supply related barrier).
o) The continuity of access to mobile money would/makes make it easy (Supply related barrier).

Data Collection Process

We distributed the survey questionnaire Data collection was done by means of distributing the standard structured questionnaires to a sample of micro-entrepreneurs.

Data Analysis

Quantitative data from the survey questionnaire was analysed using the Statistical Package for the Social Sciences (SPSS), Version 22.0. We used ANOVA for continuous variables and chi-square analyses for categorical variables to evaluate demographic, behavioural and socio-ecological differences between selected groups. Multiple linear regression analysis was used to examine the associations between the predictor parameters and outcome parameters. Assumptions of linear regression (e.g., normality, non-collinearity) were checked and confirmed to not be violated. Models were computed separately for each test. Statistical significance was set at a nominal alpha of 0.05

Model Specification and Description of Variables

To examine the determinant factors that influence the financial inclusion of micro entrepreneurs, there is an estimated equation where access to finance is reflected as a function of the following variables.

FI = f (NaS,D,HLR,CS,E,T,LM,R,MSG,Co,NAF,RF,FT,CAF)

Model Equation of the Study

The above equation number (1) can be rewritten in the following econometric model with its functional forms.

(1) $FI = \beta0+\beta1NaS+ \beta2D+ \beta3HLR+ \beta4CS+ \beta5E+ \beta6T+ \beta7LM+ \beta8R+ \beta9MSG+ \beta10Co+ \beta11NAF+ \beta12RF+ \beta13FT+ \beta14CAF+ \beta15HoS + c.$

(2) Whereas;

FI is use of mobile money services in five dimensions was as follows:

a) Using mobile money to make payments to people
b) Using mobile money to withdraw money from my bank account
c) Using mobile money to receive money from people
d) Using mobile money to buy/purchase/procure goods and services
e) Using money save money

$\beta0$ is the intercept and βi (i = 1, 2, 3, 4, 5, 6 up to 15) represents the coefficient for each of the independent variables (all measured by proxy questions ranked by Likert scale as follows:

FI= Financial inclusion was contingent on the following predictors:

i) Not appropriately served by the mobile money service provider as compared to alternative financial providers. (NaS).
ii) The mobile money service provider is far from where I do business and I have other sources. (D).
iii) Mobile money service providers have high lending interests and I have other sources. (HLR).
iv) Mobile money service providers have stiffer/cumbersome conditions to do business with than other sources. (CS).
v) I find it more expensive to deal with the mobile money service provider and opt for other sources. (E).
vi) I trust mobile money service providers less than other sources (T).
vii) I do not have that money that would require me dealing with the mobile money service provider. (LM).
viii) My religion prohibits dealing with the mobile money service provider. (R).
ix) I have other methods of saving and growing my money other than mobile money service provider. (MSG).
x) The need for collateral to get mobile money service provider loan would/makes make it difficult for me. (Co).
xi) The non-availability of mobile money service providers in my area would/makes make it difficult. (NAF).
xii) The reliability of the mobile money service provider would/makes make it easy (RF).
xiii) The flexible terms of the mobile money service provider would/makes make it easy (FT).
xiv) The continuity of access to financial services would/makes make it easy (CAF).
i) Having other sources of money to get a credit and one does not need a service from a mobile money service provider (HoS).

Since the questionnaire was designed to measure attitudes and a five-point scale was used, it behooved us to consider using composite scores. Recognising that Likert items cannot be analysed as single items as this would create information overload, composite scores / indicator scores instead were used as they represent small sets of data points that are highly related to one another, both conceptually and statistically (OESC, 2008; Statistics Canada, 2010). Therefore, combining and presenting these items as a single score reduces the potential for information overload.

The general procedure for generating composite / indicator scores includes the following steps: (1) converting, or recoding, ordinal (Likert) responses to numeric responses, (2) determining the weighted mean, and the weighted standard deviation of the original data so that the composite scores reflect (as nearly as possible) the original semantic (i.e., word) meaning of the original data. The last step of rescaling the composite scores is

necessary because it allows us to retain the meaning of the responses which went into creating the composites. For instance, if we have a composite score of 3.6 and the four questions' responses which were used to create that composite were all 4-point Likert style with the labels and values; strongly disagree = 1, disagree = 2, agree = 3, strongly agree = 4, then we can say the 3.6 means that the person associated with that score responded more with strongly agree than they did with agree, disagree, or strongly disagree. The primary benefits of using the rescaled factor scores as composite scores are that they are considered interval/ratio scaled and they reflect more closely a true score on the latent construct we were attempting to measure.

From the composite scores, it was possible for us to perform the desired analysis by creating groups. Meaningful grouping is the non-statistical combination of selected original variables based on the interpretation of the variables' values or scores. Meaningful grouping was used to create a composite outcome variable from multiple continuous variables. These original variables, when combined into a composite, can indicate an attribute (e.g., high financial inclusion or low financial inclusion) that is meaningful. A composite variable created by meaningful grouping was then made categorical. The key point is that the composite scores ought to fall in a range or probability space and as such it was possible to assign the level of inclusion.

Sample Characteristics

The population of this study was initially planned to be the owner of a micro enterprise who lives in Lusaka. In total, 294 micro entrepreneurs or an employee participated in this study. There were more female micro-entrepreneurs n = 153 (52%) than male micro-entrepreneurs n = 141 (48%). The 31 to 40 age group accounted to about 41% of respondents' age. Owners of the micro enterprise accounted for more than half n = 160 (54.4) of the respondents. The mean number of employees were 4 and the mode was 1 to 4. In about half of the respondents n = 160 (54.4%), the owner was the respondent. One hundred and twelve (38.1%) were semi-literate being primary education and secondary education micro entrepreneurs and n = 182 (61. 7%) were literate being micro entrepreneurs holding college or university qualifications. Less than half n = 137 (46.6%) of the micro-entrepreneurs had been in business more than 5 years as compared to those n = who were in business n = 157 (53.4%) for 1 - 2 Years and 2 - 5 years (See Table 1).

Table 1: Participant's Demographics

	Frequency	Percent
Gender		
Male	141	48
Female	153	52
Age Group		
21 to 30	79	26.9
31 to 40	123	41.8
Over 40	92	31.3
Position in the Business		
I am the owner of the business here	160	54.4
I am a son/daughter/ relative to the owner of the business here	65	22.1
I am a partner	24	8.2
I am a manager	45	15.3
Number of employees		
0 Employees	44	15.0
1 – 5 Employees	149	50.7
6 – 10 employees	101	34.4
11 employees and Above	17	5.8
Number of years in business		
1 - 2 Years	31	10.5
2 - 5 Years	126	42.9
Above 5 Years	137	46.6
Level of education		
Primary Education	35	11.9
Secondary Education	77	26.2
College Education	53	18.0
Bachelor's Degree	40	13.6
Master's Degree	89	30.1

Economic Activities

The sample's economic activities varied considerably by business sector classification. However, the mode appeared to be trading n = 196 (66.6%) (see Figure 1.)

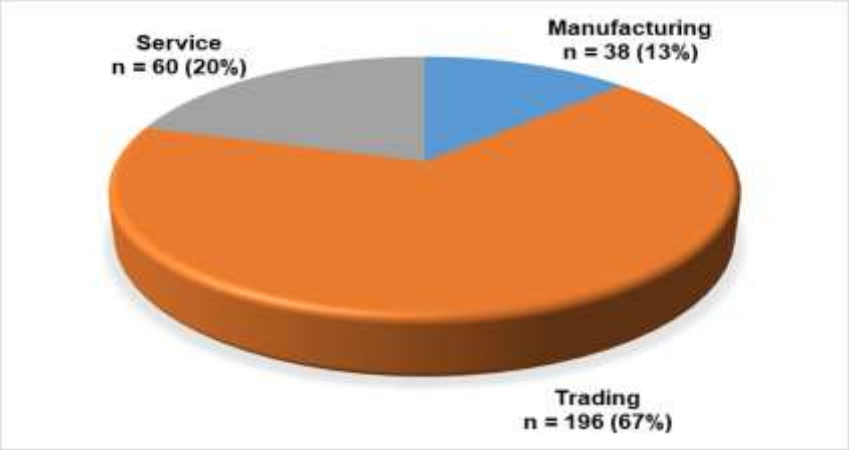

Figure 1: categories of Economic activities

Female micro-entrepreneurs were more involved in trading than males. A Chi-square test of difference was performed and it showed a statistically significant association between gender and classification of business one was involved in as shown since p was < 0.05 (0.011) (See Table 2 below).

Table 2: Association of gender and Business Classification

	Classification of Business					
	Manufacturing	Trading	Service	Value	df	X^2
Male	24	82	35	-	-	-
Female	14	114	25	9.048	2	.011
Total	38	196	60	-	-	-

While some micro-entrepreneurs were involved in more than one business sector, the one activity which was considered to be responsible for the greater amount of economic activity is dealing in textile products like brand new clothes, shoes, etc is shown below in Table 3.

Table 3: Main Economic Activity by Class

Business sector (Economic Activity).	Classification of Business			Total
	Manufacturing	Trading	Service	
Textile products – Brand New clothes, shoes, etc	-	94	-	94
Carpentry and other wood based business	24	-	-	24
Fabrication/Welding	14	-	-	14
Marketeers - food stuffs e.g dry/fresh fish, meat, vegetables,	-	28	-	28
Salaula/second hand clothes	-	13	-	13
Handicrafts	-	13	-	13
Hair salons and/or Barbershops		-	31	31
Passenger and/or goods transport	-	-	24	24
Mobile phones, Computers and mobile devices	-	48	5	53
Total by Classification	***38***	***196***	***60***	**294**

The micro entrepreneurs rated their income from their business undertakings more as very low n = 172 (58.5%) when compared to low n = 100 (34%) and n = 22 (7.5%) as high (see Figure 2 below).

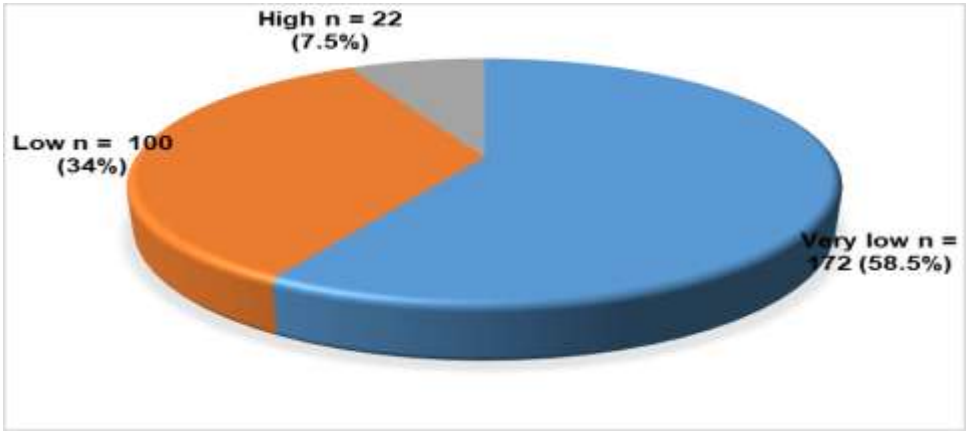

Figure 2: Rating of Income

However, there was no statistically significant difference in level of income based on gender as p was > 0.05 (0.120) as shown in Table 3.

Table 3: Association of Income by Gender

	How do you rate your income from this business?					
	Very low	Low	High	Value	df	X^2
Male	90	44	7	4.238	2	.120
Female	82	56	15	-	-	-
Total	172	100	22	-	-	-

A greater majority of micro-entrepreneurs in the CBD do not belong any financial group (neither Chilimba nor FINCA) as shown in Table 4.

Table 4: Financial Group Belonging

Financial group belonging	*Frequency*	
	Yes	*No*
I belong a Chilimba Group	49 (16.7%)	245 (83.3%)
I belong to FINCA	20 (6.8%)	274 (93.2%)

Source of Capital for the Enterprise

We assessed the source of capital for the enterprise. Two aspects of sources were assessed and these are (i) seed capital and (b) working capital.

Source of Seed Capital

The source of seed capital for the micro enterprise was more from own savings. MFI and banks as instruments of financial inclusion were not notable sources (Table 5).

Table 5: Source of Seed Capital

Source of seed capital	*Frequency*	
	Yes	*No*
My Source of seed capital was Gratuity	75 (25.5%)	219 (74.5%)
My Source of seed capital was Family	91 (31%)	203 (69%)
My Source of seed capital were Friends	40 (13.6%)	254 (86.4%)
My Source of seed capital was MFI /Village Banking	30 (10.2%)	264 (89.8%)
My Source of seed capital was the Bank	37 (12.6%)	257 (87.4%)
My Source of seed capital were my own Savings	116 (39.5%)	178 (60.5%)

Two hundred and twenty nine (77.9%) micro-entrepreneurs had only source of seed capital and n = 65 (7.8%) had two to four sources as shown in Table 6.

Table 6: Number of Sources of Seed Capital

Source of seed capital	*Frequency*	
One source	229	77.9
Two sources	42	14.3
Three sources	18	6.1
Four sources	5	1.7
Total	294	100.0

The responses were further assessed to determine what the state of opportunities was like of micro enterprises to source seed capital. Nearly all micro entrepreneurs n = 275 (93.5%) have low opportunity for seed capital as compared to only n = 19 (6.5%) who have high opportunity for seed capital (Table 7).

Table 7: Opportunity for Seed capital

Opportunity for Seed capital	*Frequency*	
Low opportunity for seed capital	275	93.5
High opportunity for seed capital	19	6.5
Total	294	100.0

Source of Working Capital

The source of seed capital for micro enterprises was more from retained earnings n = 152 (51.7%). MFI and banks as instruments of financial inclusion were not notable sources as they accounted for only just less than a quarter n = 71 (24.1%) (Table 8).

Table 8: Source of Working Capital

Source of Working Capital	*Frequency*	
	Yes	*No*
My Source of Working capital is Pension or Gratuity.	28 (9.5)	266 (90.5)
My Source of Working capital is the Family	72 (24.5)	222 (75.5)
My Source of Working capital are Friends	32 (10.9)	262 (98.1)
My Source of Working capital is MFIs/Village Banking	26 (8.8)	268 (91.2)
My Source of Working capital are Banks	45 (15.3)	249 (84.7)
My Source of Working capital are business Profits (Retained Earnings)	152 (51.7)	142 (48.3)

Micro entrepreneurs had one predominant source of working capital n = 251 (85.4%). For those that had more than one, they just accounted for only n = 43 (14.6%) as shown in Table 9.

Table 9: Number of Sources of Working Capital

Source of Working Capital	*Frequency*	
One source	251	85.4
Two sources	32	10.9
Three sources	5	1.7
Four sources	6	2.1
Total	294	100.0

The responses were further assessed to determine opportunities of micro enterprises to source working capital. Nearly all micro enterprises n = 284 (93.5%) have low opportunity for working capital. capital as compared to only n = 10 (3.4%) who have high opportunity for working capital other from retained earnings (See Table 10).

Table 10: Opportunity for Working Capital

Opportunity for working Capital	*Frequency*	
Low opportunities for source of working capital	284	96.6
High opportunities for source of working Capital	10	3.4
Total	*294*	*100.0*

The State of Financial Inclusion among Micro-Entrepreneurs (Traders) in the Central Business District of Lusaka

We assessed the number of mobile lines a micro-enterprise used as a window to establish the possibility of transacting financially which was a measure of financial inclusion. Micro-entrepreneurs were asked whether they owned a line or not. All micro-entrepreneurs had a mobile line. The majority were Airtel subscribers n = (88.4%) and the least were Zamtel subscribers n = 93 (31.6%) (See Table 11).

Table 11: Descriptives of Mobile Line Ownership

Line Ownership	*Frequency*	
	Yes	*No*
I have an Airtel line	260 (88.4%)	34 (11.6%)
I have an MTN line	178 (60.5%)	116 (39.5%
I have a Zamtel line	93 (31.6%)	201 (68.4%)

The number of lines in possession among micro entrepreneurs varied in the sample with those maintaining three lines accounted for the minority n = 38 (12.9%) and those maintaining two lines were in the majority n = 161 (54.8%) (See Table 4.11).

Table 4.11: Number of Lines

Number of Mobile Lines	*Frequency*	*Percent*
One line	95	32.3
Two lines	161	54.8
Three lines	38	12.9
Total	294	100.0

The test of differences was done and there was no statistically significant difference in level number of lines in possession by gender as p was > 0.05 (0.397). Age as well did not show any difference as p was > 0.05 (0.682) as shown in Table 12.

Table 12: Association of Lines by Gender and Age

	Number of lines in possession					
	One	Tow	Three	Value	df	X^2
Gender						
Male	51	73	17	1.84	2	.397
Female	44	88	21	-	-	-
Total	172	100	22	-	-	-
Age						
21 to 30	28	39	12			
31 to 40	39	67	17	2.29	4	.682
Over 40	28	55	9			
Total	95	161	38			

From table 13, the micro entrepreneurs were able to use mobile money once in a week and almost every day in the five domains of use.

Table 13: FI indicators of Mobile Money Use

FI indicators of mobile money use		*Almost every day in a week*	*Once in a Week*	*Once in a fortnight*	*Once in a while*	*Never*
a)	I am using mobile money to make payments to people	29	50	18	40	29
b)	I am using mobile money to withdraw money from my bank account	59	36	38	94	67
c)	I am using mobile money to receive money from people	31	61	60	53	89
d)	I am using mobile money to buy/purchase/procure goods and services	37	71	55	53	78
e)	I am using money save money	51	40	40	58	105

From the descriptives above, the ordinal descriptions were converted to numeric values in order to determine whether the composite score was relevant to be considered as critical in the findings. We set the decision rules as follows; if the composite scores for the battery of micro entrepreneurs were below the population mean 15, it meant that the micro entrepreneurs were financially excluded. In this study, the sample mean was more than 15 (21.1) (see Table 14) implying there was evidence of financial inclusion.

Table 14: Descriptives of Financial Inclusion Indicators of Mobile Money Financial Services Use

Mean	±SD	Median	Mode	Minimum	Maximum
21.1	5.49	12	5	5	25

The overall position of mobile in Table 4.14 when summated shows the occurrence more of a high degree of usage among micro enterprises accessing mobile money products n = 185 (62.9%) when compared to n = 109 (37.1%) who experienced a low degree of usage of mobile money products (see Figure 2).

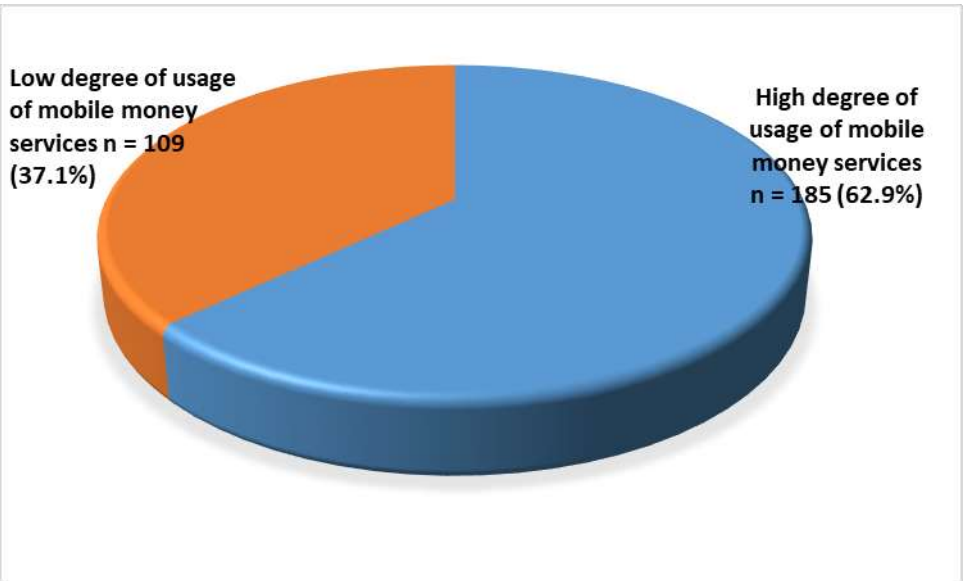

Figure 2: Descriptives of Mobile Money of Use

However, before presenting the regression results, we provide the description of the fifteen predictor variables. The predictor variables were measured on a five point scale as follows 1 for strongly disagree, 2 for disagree, 3 for somewhat agree, 4 for agree and 5 for strongly agree. There were five variables with more sums of agreement (agree + strongly agree) that portrayed negative attributes for financial inclusion in particular mobile money financial services financial services. Out of the fifteen uses, micro-entrepreneurs rendered very favourable responses regarding use (see Table 15a).

Table 15a: Descriptives Of Mobile Money Financial Services Use Barriers

Barriers to use of Mobile money financial services	*SDA*	*DA*	*SWA*	*A*	*SA*
Mobile money financial services serve customers better compared to alternative financial providers. (Supply related barrier).	42	30	78	85	89
The mobile money service provider is far from where I do business and as such, I have other sources of services. (Demand related barrier).	132	67	76	11	8
Mobile money financial services service providers have ideal lending interests (Supply related barrier).	22	17	90	53	112
Mobile money service providers have good conditions to do business and I have no other sources. (Supply related barrier).	294	-	-	-	-
I find it less expensive to deal with the mobile money service providers and do not opt for other sources (Supply related barrier).	76	119	45	54	-
I trust service providers more than other sources (Supply related barrier).	129	126	35	20	13
I have far less money that would require me not to do business with the mobile money service providers. (Demand related barrier).	110	97	69	7	11
My religion prohibits dealing with the mobile money service providers. (Demand related barrier).	116	114	74	-	-
I have other methods of saving and growing my money other than using mobile money service providers. (Demand related barrier).	105	189	-	-	-
The need for collateral to get mobile money service provider loan makes it difficult for me to use the service. (Supply related barrier).	5	1	75	111	102
The non-availability of mobile money service provider in my area denies me an opportunity to use the service. (Supply related barrier).	106	188	-	-	-
The mobile money service provider is reliable in the financial service it provides (Supply related barrier).	190	104	-	-	-
The inflexible terms of the mobile money service provider denies me an opportunity to use the service (Supply related barrier).	-	-	73	124	98
The continuity of access to the mobile money service provider gives me an opportunity to use the service (Supply related barrier).	-	-	-	152	144
Mobile money serve providers are better compared to alternative financial providers. (Supply related barrier).	37	3	53	119	82

Linear regression was performed to determine the impact of barriers on commercial bank usage. A look at Table 15b, we see that R^2 is simply an estimate of how much the variation of dependent variable mobile money financial services usage as a measure of financial inclusion profitability is explained by the 15 predictor variables in the population. The R value shows a simple correlation 0.502 (the "R" Column), which indicates a low degree of correlation. R^2 value shows 25.2% of the variation in mobile money financial services usage and this is explained by the combined explanatory variables. The model is a rather weak fit to estimate the micro enterprises use of mobile money financial services. Therefore,

it is possible to infer that the remaining 74.8% of the variation in mobile money financial services usage may be explained by other explanatory variables which are not included in the model.

Table 15b: Results of the Model Summary

Model	R	R^2	Adjusted R Square	Std. Error of the Estimate
1	.502[a]	.252	.0.212	4.812

(a) Predictors – Mobile money financial services barriers: (Constant - NaS,D, HLR, CS, E, T, LM, R, MSG, Co, NAF, RF, FT, CAF, HoS).
(b) Dependent variable mobile money financial services usage

This model summary is satisfactory to proceed with the next step – performing ANOVA.

The ANOVA table, (Table 15c), below reports how well the regression equation fits the data (i.e., predicts the dependent variable in this case Mobile money financial services usage as an aspect of financial inclusion. The ANOVA table indicates that the regression model predicts the dependent variable significantly well. We know this because the "Sig." column indicates the statistical significance of the regression model that was run. Here, $p < 0.000$, which is less than 0.05, and indicates that, overall, the regression model statistically significantly predicts the outcome variable (i.e., it is a good fit for the data). This is further confirmed by the F-ratio which is greater than 1 and in Table 15c, the value is 6.248 which is good.

Table 15c: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2170.501	15	144.700	6.248	.000[b]
Residual	6438.210	278	23.159		
Total	8608.711	293			

(a) Predictors – Mobile money financial services barriers: (Constant - NaS,D, HLR, CS, E, T, LM, R, MSG, Co, NAF, RF, FT, CAF, HoS).
(b) Dependent variable Mobile money financial services usage

The multiple regression model with all predictors produced $R^2 = .252$, $F(15, 278) = 6.248$, $p < .005$. In the regression coefficient table below (Table 15d), Sig. is < 0.05 however, the null hypothesis are rejected in case of three out of fifteen variables and these are:

a) The mobile money service provider is near to where I do business and as such, I have no other sources of services. (Supply related barrier).
b) Mobile money service providers have good conditions to do business and I have no other sources. (Supply related barrier).
c) I have money that would require me to do business with the mobile money service providers. (Demand related barrier).

These four variables have a positive impact on use of mobile money financial services.

Table 15d: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.138	2.015		7.511	.000
	I have other sources of credit than mobile money financial services (Supply related barrier).	.719	.632	.074	1.138	.256
	Mobile money serve customers better compared to alternative financial providers. (Supply related barrier).	-.032	.294	-.007	-.109	.913
	The mobile money service provider is near to where I do business and as such, I have no other sources of services. (Supply related barrier).	.103	.225	.028	.459	.647
	Mobile money have ideal lending interests and I have no other sources. (Supply related barrier).	.768	.255	.224	3.014	.073
	Mobile money have good conditions to do business and I have no other sources. (Supply related barrier).	.025	.275	-.007	-.091	.928
	I find it less expensive to deal with the mobile money service provider and do not opt for other sources (Supply related barrier).	.559	.220	-.168	-2.548	.011*
	I trust mobile money more than other sources (Supply related barrier).	.648	.206	.191	3.140	.002*
	I have money that would require me to do business with the mobile money service provider. (Demand related barrier).	.493	.222	-.161	-2.224	.027*
	My religion prohibits dealing with the mobile money service provider. (Demand related barrier).	.104	.339	.019	.307	.759
	I have other methods of saving and growing my money other than use the mobile money service provider. (Demand related barrier).	-.374	.358	-.060	-1.043	.298
	The need for collateral to get mobile money service provider loan makes it difficult for me to use the service. (Supply related barrier).	-.045	.227	-.014	-.199	.842
	The non-availability of mobile money in my area makes make it difficult for me to use the service. (Supply related barrier).	.210	.272	.053	.770	.442
	The mobile money service provider is reliable in its services (Supply related barrier).	.030	.252	.008	.120	.904
	The inflexible terms of the mobile money service provider makes it had to use the services (Supply related barrier).	.327	.251	.091	1.305	.193
	The continuity of access to the mobile money service provider makes make it easy for me to use the service (Supply related barrier).	-.140	.295	-.031	-.473	.637

Dependent Variable: Score for Mobile money service usage

The multiple regression model with all predictors produced R2 = 0.695, F (15, 273) = 6.273, $p < 0.005$. High lending interests, being expensive to deal with the bank, bank trust and lack of money have significant impacts on use of bank products. In the regression coefficient table above, Sig. or *p* values are < 0.05 for, the null hypothesis are thus rejected in case of four variables. These have a positive impact on banking services and are restated for emphasis in Table 15e below:

Table 15e: Variables Impacting (Barriers) Mobile Money Financial Services

Predictor variable	*P value*
I find it less expensive to deal with the mobile money service provider and do not opt for other sources (Supply related barrier).	.011
I trust mobile money financial services more than other sources (Supply related barrier).	.002
I have money that would require me to do business with the mobile money service provider (Demand related barrier).	.027

We further flag "null findings" – those variables whose statistical tests are not significant and did not contribute to the model. These are often times interpreted as non-significant tests. We are taking them as conclusive evidence for the absence of the effect or impact in question. We also restate these as Sig or *p* values being > 0.05 (see Table 14f).

Table 14f: Variables not Impacting Financial Inclusion

Predictor variable	*P value*
(Constant)	.291
Mobile money serves customers better compared to alternative financial providers. (Supply related barrier).	.471
Mobile money service providers have ideal lending interests (Supply related barrier).	.534
Mobile money have ideal lending interests and I have no other sources. (Supply related barrier).	.730
I find it less expensive to deal with the mobile money service providers and do not opt for other sources (Supply related barrier).	.432
I trust service providers more than other sources (Supply related barrier).	.827
My religion prohibits dealing with the mobile money service providers. (Demand related barrier).	.506
I have other methods of saving and growing my money other than using mobile money service providers. (Demand related barrier).	.386
The need for collateral to get mobile money service provider loan makes it difficult for me to use the service. (Supply related barrier).	.078
The non-availability of mobile money service provider in my area denies me an opportunity to use the service. (Supply related barrier).	.533
The mobile money service provider is reliable in the financial service it provides (Supply related barrier).	.934
The inflexible terms of the mobile money service provider denies me an opportunity to use the service (Supply related barrier).	.154
The continuity of access to the mobile money service provider gives me an opportunity to use the service (Supply related barrier).	.627
Mobile money serves providers better compared to alternative financial providers. (Supply related barrier).	.062

Dependent Variable: Score for Mobile money usage

Discussion

The aim of the study was to profile the state of mobile money financial inclusion/exclusion among micro-entrepreneurs (traders) in the Central Business District. The main findings are that the source of seed capital for the micro enterprise was more from own savings than formal institutions implying non-use of micro finance institutions or commercial banks. In the event that micro entrepreneurs got seed capital, more than three quarters that is two hundred and twenty nine (77.9%) had only one source of seed capital when compared to n = 65 (7.8%) who had two to four sources of seed capital. Nearly all micro entrepreneurs n = 275 (93.5%) had low opportunity for seed capital as compared to only n = 19 (6.5%) who had high opportunity for seed capital. The source of seed capital for micro enterprises was more from retained earnings n = 152 (51.7%) than other sources. It is evident that micro finance institutions (MFIs) and banks were not notable sources of seed capital as they accounted for only just less than a quarter n = 71 (24.1%).

These micro entrepreneurs had one predominant source of working capital n = 251 (85.4%). Only n = 43 (14.6%) had more than one source of working capital. The micro enterprises have had low opportunity for working capital as only n = 10 (3.4%) had access to it from financial institutions when compared to n = 284 (93.5%) who did not. The majority got working capital from capital retained earnings. An assessment of mobile line ownership as a gateway to one aspect of financial inclusion shows that majority of micro entrepreneurs n = (88.4%) were Airtel subscribers and a minority n = 93 (31.6%) were Zamtel subscribers The number of lines in possession varied in the sample with n = 38 (12.9%) maintaining three lines being in the minority group and those maintaining two lines n = 161 (54.8%) were in the majority. There was no statistically significant difference in the number of lines in possession by gender as p was > 0.05 (0.397). Age as well did not show any significant difference as p was > 0.05 (0.682). Micro entrepreneurs were able to use mobile money services once in a week and almost every day. Use was influenced by the facts that was it less expensive to deal with the mobile money service provider, customer trust of the mobile money financial services provider was more than other service sources and the micro entrepreneurs had the money a priori to do business.

We can argue that the lack of access to traditional financial services like micro finance services and commercial bank services in the CBD, combined with the increasingly widespread use of mobile phones, has given rise to a mobile phone-based micro economy in the CBD. The three mobile platforms as such are increasingly being used as an alternative to traditional banking systems. This may explain the rise in digital transactions that were observed in the FinScope study of 2020. It is evident that mobile money transfer services could arguably be the single most effective contributor to financial inclusion initiatives among micro entrepreneurs while inclusion in other areas like insurance and micro finance remain un accessed. This suggests that mobile money services are facilitating access to cheap and reliable financial services for an ever increasing formerly unbanked segment of the population. So far, the work of mobile network operators ought to be lauded. The use of mobile money financial services has largely been driven by convenience, timeliness, accessibility, affordability, and security. This argument is supported by the FinScope surveys of 2015 and 2020. This survey shows that Zambia has had a significant increase in the number of mobile money financially-included adults. As the number of mobile service providers in Zambia grew, more financially-excluded families have been reached through the use of mobile money financial services (Chikumbi and Siame, 2018).

There are studies that provide probable assumptions for the positive impacts that could be linked to mobile money financial services as demonstrated in this study. Munyegera and Matsumoto (2016) investigated household welfare in Uganda and concluded that access to mobile phone financial services had a positive effect on remittances. Specifically, households that had access to mobile phone based money transfer services were more likely to receive remittances than those who did not. In addition, the frequency and value of remittance increased with access to mobile phone based financial services. The increase in remittance was attributed to the reduction in transaction costs associated with mobile phone money transfer services. An increase in remittances improved welfare in terms of increased real per capita consumption.

The study seems to agree with the 2020 Finscope and it suggests that apart from mobile money FI, micro entrepreneurs rely on informal financial mechanisms, as an alternative means, to manage their finances and to meet their financial needs, due to the lack of access to other formal financial services. As a result, several policy initiatives ought to be undertaken by many governments and private entities to promote branchless banking such as mobile money. We have

seen the growing mobile money financial services and Zambia's financial inclusion landscape is to some extent changing. This paradigm is indeed encouraging, given that a hitherto unbanked portion of the population is being reached by accessible and affordable financial services through mobile telephony or technology (mobile money).

The findings and the reviewed literature have highlighted the importance of financial inclusion for growth and poverty reduction. Improving the access to financial services may help to boost growth especially to sustain a rapid and inclusive economic growth and hence eradicate extreme poverty and hunger. Generally, our findings highlight the importance of mobile money as a tool for enhancing financial inclusion to enhance transactions in the Zambian economy. Most importantly, our findings suggest that the use of mobile money is more useful among micro entrepreneurs. From a policy perspective, the findings from our study support the use of mobile money as a tool for enhancing the financial inclusion agenda by policymakers in Zambia.

Recommendations

Financial inclusion is key to boost economic and social inclusion, and removing barriers to financial access is included among the key enablers for achieving the United Nations Sustainable Development Goals (SDG) of the 2030 Agenda. Based on the findings, the following address the third research question which is "How can financial inclusion among entrepreneurs be enhanced?" In essence the recommendations are as follows:

1) The government should institute holistic financial frameworks **that** would seek to get majority of the citizenry like micro entrepreneurs to be involved in the financial sector, since the results have shown a generally low financial inclusiveness in this group. This should be done by formulating a financial inclusion policy that covers the micro level and would focus on ensuring that mobile money service providers make their products more accessible, user friendly, quality and continue to be less expensive for the usage of not only micro entrepreneurs.
2) While mobile money financial services has shown that micro entrepreneurs use it, according to Gwalani and Parkhi (2014) providing adequate income opportunities to the poor will improve inclusion by enhancing the use of products such as electronic payment systems, there is need to expand the use of mobile money financial services technology to deliver financial services to enhance inclusion. This may require adding more features on mobile ups and firms owning mobile money financial services to consider franchising.
3) There is need to relook at how economic growth could be enhanced by widening financial inclusion and eradicate poverty. While mobile money services seem to be the main contributor to increase in FI, there is need to take head of the numerous areas and roles of financial inclusion that have been debated in literature (see Han and Sherraden, 2009; Mullainathan and Shafi, 2009; Akudugu, 2013; Karpowicz, 2014; The World Bank, 2014; GFDR, 2015/2016). Zambia's development of an all-inclusive financial system is needed for the different users and not only for those dealing in a formal way. We propose context specific products that could be appreciated by people in the Progress out of Poverty Index 1 and 2 categories that includes micro traders and this would require evidence based financial solutions. Hence more research is being proposed in this area.

Conclusion

The study to set answer the research question aim of this study was to investigate the determinants that have an impact on the financial inclusion of micro enterprises in the Central Business District (CBD) of Lusaka and the result of regression analysis indicate that two supply-side and one demand side factors have a positive effect on financial inclusion. Despite the myriad policy prescriptions made by the Central Bank to ensure that Zambians especially the vulnerable members of the community are financially included, the levels of financial inclusion by way of mobile money use are worth noting.

The findings and the reviewed literature have highlighted the importance of financial inclusion for growth and poverty reduction. Improving the access to financial services may help to boost growth especially to sustain a rapid and inclusive economic growth in Zambia and hence eradicate extreme poverty and hunger, the policymakers especially the Central bank and the Ministry of Finance ought to build an efficient, strong, and well-functioning financial market system that provides affordable and sustainable financial services to vulnerable members of the Zambia society and in this case micro entrepreneurs.

Ethics Statement

The studies involving human participants were reviewed and approved by The University of Zambia Humanities and Social Sciences Research Ethics Committee.

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Author Contributions

The first author, under the supervision of the second author (i.e. co-author), conceived the study as part of a Ph.D. (Economics and Finance) Thesis of The University of Zambia under The Institute of Distance Education.

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Conflict Of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest. This research article contains our original work, has not received prior publication, and is not under consideration for publication elsewhere. The authors have seen and approved the manuscript being submitted. The views expressed are personal. The authors are solely responsible for the content and writing of the paper.

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