An analysis of the influence of socioeconomic and demographic factors on financial inclusion in underdeveloped regions: A case study of rural Zimbabwe

David Mhlanga

Keywords: Agriculture, Demographic Factors, Financial Inclusion, Smallholder farmers, Rural Zimbabwe

JEL Classification: G2, O1, O17

ABSTRACT

One of the most important concerns facing the world today is financial inclusion. Organizations, financial institutions, and people in positions of responsibility are all demonstrating an interest in learning more about this. Several industrialized and emerging nations have recognized financial exclusion as a major socio-economic problem that needs to be addressed. This paper aims to examine the factors influencing smallholder farmers' financial inclusion in Zimbabwe. Using the logistic regression analysis, the results of the study pointed out that there was a considerable correlation between a household's size, off-farm income, agricultural extension service, distance, and transaction costs in a logit model, which was used to determine whether it had access to financial services. Government and financial service providers should strive to make it easier for people to get to their nearest banking institutions by establishing access points close to their residences. Filling stations and major supermarkets are examples of places where access points could be positioned. As a result of greater access to formal financial services, small-scale farmers may benefit. Financial service providers must perform regular charge reviews as one of the factors that may deter families from utilizing financial services.

Article history:
Received 06 August 2022
Received in rev. form 27 August 2022
Accepted 06 September 2022

Introduction

One of the most pressing problems facing the globe today is financial inclusion. More and more governments, multinational banks, and people in positions of authority are showing an interest in gathering additional information about it. The existence of financial exclusion has been cited as one of the socio-economic issues that have to be addressed in many industrialized and developing countries. One of the objectives that the World Bank has set for itself for the year 2020 is to attain inclusive access to financial services (Demirgüç-Kunt and Klapper 2012, Ozili 2021, Mhlanga and Dunga 2021). In 2017, the World Bank Group (WBG) made it abundantly clear that administrations are generating National Financial Inclusion Strategies (NFIS) to ensure that sufficient tools and initiatives are in place to fulfill financial inclusion obligations. These NFIS are intended to ensure that everyone has access to the financial services they need. Plans of action that have been agreed upon and outlined, either on a national or subnational scale, are what are known as NFIS (Demirguc-Kunt, Klapper, Singer and Ansar 2018; Mhlanga and Dunga 2021). This highlights how financial inclusion has gained popularity on a global scale, with more than 50 countries making public commitments to the topic as of the end of the year 2014 (Demirguc-Kunt and Klapper 2012, Ozili 2021, Mhlanga and Dunga 2021).

In the fight against poverty, one of the most important factors that have been important has been financial inclusion According to Mhlanga (2020) the appropriate allocation of productive resources can be helped along by financial inclusion, which in turn helps in the fight against poverty. To gain a deeper comprehension of the different facets of financial inclusion, a great number of studies...
were conducted in a great number of countries for instance Beck et al. (2015), Akileng et al., (2018), Bozkurt et al., (2018), Fernández-Olit et al., (2019), Asuming et al., (2019). Some scholars investigated single case studies like Mhlanga and Denhere (2021), Datta and Singh (2019) and Altarawneh et al., (2020), Amoah et al. (2020) among others.

Mhlanga and Denhere's (2021) inquiry on the factors impacting financial inclusion in Southern Africa focused mostly on South Africa as the country of investigation's major subject. According to the findings of the research, the elements that have the most impact on a person's ability to participate in the financial system include their level of income, demographic category, gender, marital status, age, and educational attainment. In addition to this, Amoah et al. (2020) investigated the reasons why people in Ghana's Greater Accra Region use mobile money. In their investigation of the elements that play a role in financial inclusion in Tanzania, Ndanshau and Frank (2021) made use of the Tanzania Finscope survey that was conducted in 2017. The study used the probit model to determine that the contributing factors to financial inclusion in Tanzania were being middle-aged, residing in a town, having to hold a full-time position, being a man, earning more money, and having more education. Other contributing factors to financial inclusion in Tanzania were being middle-aged, residing in a town, having to hold a full-time position, being a man, earning more money, and having more education. According to Ndanshau and Frank (2021), two of the obstacles to financial inclusion are a lack of awareness regarding the availability of financial services and an inadequate level of access to such services. In the year 2020, Ozili (2020) presented a comprehensive analysis of the most up-to-date information available on financial inclusion from every region of the world. Ozili (2020) asserts that the level of financial innovation, the incidence of poverty, and the stability of the financial system are all factors that influence financial inclusion. There is a wide disparity between countries in terms of their economic climate, level of financial literacy, and regulatory settings.

Taking into consideration the points raised in the preceding discussion, the research aims to investigate the elements that play a role in determining whether Zimbabwe's smallholder farmers have access to financial services. The study will use data collected through a structured questionnaire and logistic regression will be used in the analysis. This article is structured as follows: after the introduction, there is a review of the relevant literature that includes both theoretical and empirical research that throws light on the linkage between theory and practice. The background information on the research and methodology is presented in the third half of the article. Following the presentation of the study's findings and analysis, the authors will move on to comments and implications. The last section of this paper discusses the limits of the study, as well as its major points, recommendations, and future research prospects.

Literature Review

Theoretical and Conceptual Background

Financial Inclusion

According to the World Bank (2022), “having access to relevant and fairly priced financial products and services that meet their needs, bill payments, payments, saving, credit, and insurance offered responsibly and sustainably” is the definition of “financial inclusion”. According to the World Bank (2022), one of the first steps toward increased financial inclusion is having access to a transaction account. This account gives users the ability to store money, as well as send and receive payments. Because a transaction account serves as a gateway to other financial services, the World Bank Group (WBG) continues to place a high priority on ensuring that everyone has access to a transaction account (World Bank 2022).

Sarma (2008) argued further “that the literature has characterized financial inclusion or financial exclusion within the framework of a more general issue of social inclusion (or exclusion) in a society. This is something that Sarma characterized as "financial inclusion or financial exclusion". According to Leysdon and Thrift (1995), the phrase "financial exclusion" is used to characterize acts that are taken to restrict people and members of certain socioeconomic categories' access to the official monetary system. According to Sinclair (2001), the definition of financial exclusion is the inability to acquire critical financial services in a manner that is deemed appropriate. Exclusion can be the result of several factors, including issues with access, circumstances, pricing, marketing, or even self-exclusion as a reaction to unfavourable experiences or preconceptions.

Sarma (2008) argued further “that the literature has characterized financial inclusion or financial exclusion within the framework of a more general issue of social inclusion (or exclusion) in a society. This is something that Sarma characterized as "financial inclusion or financial exclusion". According to Leysdon and Thrift (1995), the phrase "financial exclusion" is used to characterize activities that are taken to restrict members of certain socioeconomic categories and persons' access to the formal financial system. According to Sinclair (2001), the definition of financial exclusion is the inability to acquire critical financial services in a manner that is deemed appropriate. Exclusion can be caused by a variety of factors, including challenges with access, circumstances, pricing, marketing, or even self-exclusion as a reaction to unfavourable experiences or impressions.

According to Cicciello et al., financial inclusion and exclusion can be characterized in a variety of contexts, including inclusion or exclusion from social activities. One of these contexts is the social activities that people participate in (2021). According to Buckland (2012), the absence of access to financial services is the definition of the phenomenon known as financial exclusion. Exclusion can take many different forms and is contingent on a wide range of criteria. These factors can include a person's location, the cost of a service, as well as their level of awareness and education regarding the benefits of financial services. People or groups in a society might be financially excluded if they have restricted access to official financial services for a variety of reasons, some of which could
be considered discriminatory (Cicchiello et al., 2021). The many aspects of digital financial inclusion are depicted in the following figure, which you may find below.

**Elements of Financial Inclusion**

Figure 1 above the various elements of digital financial inclusion. These elements together help in building an inclusive financial system.

![Financial Inclusion Diagram](image)

**Figure 1:** Elements of Digital Financial Inclusion; **Source:** (Author, 2022)

The main components of digital financial inclusion are highlighted in figure 1 above; these components work together to create an inclusive financial system. Affordability, utilization, affordability, sufficiency, quality, access, education, awareness, and availability are among the factors.

Rashdan and Eissa (2020) conducted research in Egypt to study the factors that determine financial inclusion. According to the findings that were presented by Rashdan and Eissa (2020), there is not a significant relationship between gender and the level of financial inclusion in Egypt. On the other hand, wealthier individuals, who have a higher level of education, and are older are more strongly included in the financial system. According to Rashdan and Eissa (2020), the lack of money is the primary obstacle to financial inclusion in Egypt. This makes it difficult to register a formal account, savings account, or credit account.

Tinta et al., (2022) researched the factors that influence financial inclusion and financial resilience in Africa. They discovered that individual characteristics, barriers to formal accounting, financial literacy, and innovation are the primary determinants of whether a person chooses to have a traditional or mobile account. According to Tinta et al. (2022), informal savings are prevalent among women and younger people, as well as in rural areas. Formal savings, on the other hand, are more common among older people, as well as in urban areas; additionally, a higher level of education and income drives people to migrate toward formal savings.

Tinta et al., (2022) discovered that individuals' levels of resilience grow when they are married, financially literate, and innovative, whereas individuals' levels of vulnerability increase when they are employed. Important proposals for public policy include enhancing the financial sector, institutions, innovations, and activities that generate money to increase the participation of women and decrease the gender gap. Anyangwe et al., (2022) investigated the role that culture plays as a determinant of financial inclusion. Financial inclusion was defined as formal account ownership, savings, and credit in/from formal financial institutions. According to the findings, the likelihood of being financially included is lower in cultures where power distance is great, cultures that are more masculine, and cultures that shun uncertainty to a significant degree. Living in cultures that are more individualistic, long-term oriented, and indulgent enhances the likelihood of financial inclusion, according to Anyangwe et al. (2022).

The following table, Table 1, provides a summary of additional material on financial inclusion that may be found in the literature.
Table 1: Selected studies on Financial Inclusion

| Study                  | Focus                                                                 | Methodology                                      | Findings                                                                                       |
|-----------------------|----------------------------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------|
| Ozili (2021)          | An overview of global research on financial inclusion                 | Detailed analysis of recent data on financial inclusion | The primary takeaways from this research indicate that financial inclusion is influenced by, and in turn is affected by, a variety of factors, including but not limited to financial innovation, poverty levels, the stability of the financial sector, economic health, financial literacy, and legal requirements that differ from nation to nation. |
| Kara et al., (2021)   | Financial inclusion as a means of achieving the Sustainable Development Goals of the United Nations: A Systematic Literature Review on Global Access to Finance | Review the growing body of empirical data to determine whether a person's socioeconomic status such as income and education and demographic traits such as gender and race affect their capacity to obtain credit. | The authors concluded that increasing a person's level of education and/or financial literacy leads to an increase in that person's access to credit. People with lesser incomes and lower levels of wealth have a decreased probability of receiving credit from traditional financial institutions. In poor nations, there is a greater likelihood that women will be discriminated against, denied access to formal loans, and charged higher costs. It is more likely that immigrants, members of ethnic minorities, people with disabilities, and those who are not White will be excluded from official credit markets. |
| Ndanshau and Njau (2021) | Empirical Study of Tanzania's Demand-Side Financial Inclusion Determinants | To analyze the factors influencing financial inclusion in Tanzania, the study used a probit model. | According to the findings, individuals who are male, middle-aged, urban residents, formally employed, earning more money, and have a higher level of education are more likely to have access to formal financial services in Tanzania, with formal employment, income, and education having the most significant influence. According to the findings of the descriptive study, the two primary barriers to financial inclusion in Tanzania are a shortage of sufficient cash and a lack of knowledge regarding financial services. The findings of this study suggest many strategies and components that can be used to improve financial inclusion in Tanzania. |
| Amoah et al., (2020)  | What factors influence the use of mobile money as a tool for financial inclusion? | Due to the dependent variable's binary nature, a logit model and its marginal effects were estimated. | According to the findings of the study, education level, income level, and the presence of younger age cohorts that are technologically sophisticated are some of the primary factors that influence the utilization of mobile money in Ghana. In addition, both parametric and non-parametric assessments of the usage of mobile money by gender reveal a statistically significant variation in gender usage, albeit one of a relatively minor degree. According to the findings, using mobile money consistently to gain access to social and economic services has the potential to considerably boost financial inclusion, financial empowerment, and general human welfare. |

Source: Authors’ Compilation from various sources

The table above is summarising additional literature on financial inclusion from the literature.

Research and Methodology

Data

The structured questionnaire that was used to collect the data for this study was developed and approved by “the North-West University, Management and Economic Sciences, Law, Theology, Engineering, and Natural Sciences Research Ethics Committee (NWU-EMELTEN-REC). This committee operates under the ethical clearance number NWU-00354-19-2A”. The questionnaire was used to collect the data for this study. In addition, the study was given the green light by the Ministry of Lands, Agriculture, Water, Climate, and Rural Resettlement in Zimbabwe.

The study collected information from both male and female household heads who were working in agriculture at the time the survey was conducted. The region of Manicaland in Zimbabwe was singled out for special attention in the survey. The A1 and A2 farm types were selected as the focus of the survey. Subsistence farming in a community that is either self-contained or villagized is an example of the A1 settlement style, which is prevalent in Zimbabwe (Goebel, 2005).

In the villagized model, people live in villages, and the state is responsible for providing services such as the development of infrastructure. However, in the self-contained variation model, individuals move into self-contained plots, and they are the ones who
Econometric Model

Dependent Variable

The dependent variable is binary, and it takes on the value 1 when the head of the household reports having a bank account, and it takes on the value 0 otherwise, which is when the family does not have a bank account. The logit model was utilized because of the research that was conducted by various scholars like Barros et al., (2007), Sanderson et al., (2018), and Abel (2020) among many others.

Empirical Model: The Logit Model

Because the dependent variable in question can only take one of two possible values, conditional probability models were necessary to analyse the data. As a direct consequence of this, a logistic regression analysis based on the logit model was carried out. As may be seen in the following illustration, the equation of the logit model converts the log odds of success into a linear component as shown below:

$$\log\left(\frac{\pi_i}{1-\pi_i}\right) = \sum_{k=0}^{K} x_{ik} \beta_k \quad i = 1,2,\ldots,N$$

It is recommended that we utilize the maximum likelihood estimate to locate the parameters in equation one at which the probability of the observed data is the highest. To move on with the estimation of the logit model, the very first thing that needs to be done is to specify the probability that Y=1. The chance that Y is equal to zero is denoted by the symbol 1-P. The probability is denoted by the letter P. The only difference between Y=1 and Y=0 is whether the family has access to electric power. When a household does have access to a bank account, the value of Y is 1, but when a household does not, the value of Y is 0. Because of this, the following equation will be driven home:

$$\ln \left( \frac{P}{1-P} \right) = \beta_0 + \beta_1 X$$

To compute the expected chance that Y will equal 1 for all possible values of X, use the equation indicated in the following paragraph:

$$\hat{p} = \frac{\exp (\beta_0 + \beta_1 X)}{1 + \exp (\beta_0 + \beta_1 X)} = \frac{e^{\beta_0 + \beta_1 X}}{1 + e^{\beta_0 + \beta_1 X}}$$

The formula that will be used to represent the model in which the variables will be utilized as the factors impacting the demand for a bank account is as follows:

$$\ln \left( \frac{P}{1-P} \right) = \beta_0 + \sum_{i=1}^{n} \Phi_i + \sum_{j} \Phi_j + \varepsilon$$

In the equation presented above, \(\sum_{i=1}^{n} \Phi_i\) is a representation of all the model’s factors, and \(\sum_{j} \Phi_j\) is a representation of all of the model’s covariates. When Z is substituted into the equation in the previous sentence, the equation changes to read as follows:

$$Z = \beta_0 + \Phi_1 Education level + \Phi_2 Gender + \Phi_3 Age + \Phi_4 Household size + \Phi_5 Off farm income + \Phi_6 Land size + \Phi_7 Informal financial market participation + \Phi_8 Agricultural extension service + \Phi_9 Distance + \Phi_{10} Transaction costs + \Phi_{11} Financial literacy + \Phi_{12} Marital status + \varepsilon.$$

Independent Variables

There was a total of twelve factors, and they were as follows: level of “education, household size, income from sources other than farming, age of the head of the household, gender, transaction cost, distance from the financial institution, level of financial literacy, marital status, and ability to participate in informal credit”.

Analysis and Findings

Descriptive Statistics

According to the data, out of the total of 405 households that participated in the survey, 142, or 35 percent, were led by women, while the remaining 263, or 65 percent, were led by males. The summary of the households in the sample that participated in the survey is
given as follows: households that have insurance coverage were 73 which translates to 18 percent, and there were also 332 households, or 82 percent, that do not have insurance. The households that had a bank account were 180 translating to 44 percent of the total and households that did not have a bank account were 225 translating to 56 percent of all households.

| Variable                  | B     | S.E.  | Wald | Df | Sig.  | Exp(B) |
|---------------------------|-------|-------|------|----|-------|--------|
| Gender (1)                | -0.036| .231  | .025 | 1  | 875   | .964   |
| Age                       | .060  | .012  | 26.631| 1  | .000***| 1.062  |
| Household size            | -2.89 | .005  | 19.840| 1  | .000***| .749   |
| Off-farm income           | .003  | .001  | 14.506| 1  | .000***| 1.003  |
| Education level           | .371  | .239  | 2.409 | 1  | .121   | 1.450  |
| Agricultural extension service (1) | -7.68 | .308  | 6.215 | 1  | .013** | .464   |
| Distance                  | -1.01 | .061  | 2.758 | 1  | .007*  | 1.106  |
| Transaction costs         | -1.05 | .023  | 21.333| 1  | .000***| .900   |
| Marital Status (1)        | .273  | .250  | 1.201 | 1  | .273   | 1.315  |
| Financial literacy (1)    | .126  | .224  | .316  | 1  | .574   | 1.134  |
| Constant                  | -2.113| .930  | 5.163 | 1  | .023   | .121   |

Omnibus test: “Step, model, and block: Chi-square (79.961) df (10) Sig (0.000). -2 log-likelihood (478.103a) Cox and Snell R Square (0.179), Nagelkerke (0.240) (significant at 1 percent***, 5 percent**, 10 percent*)”

Table 2 provides us with the results of the study of the logistic regression in terms of their monetary value. After being subjected to several tests intended to simulate multicollinearity, the model was shown to be devoid of multicollinearity by every one of the independent variables containing a variable with an absolute value that was lower than 0.8. According to the findings of the logistic regression, the variables that had the most significant impact on whether a household was included in the financial system were the age of the head of the household, the size of the household, income from sources other than farming, the availability of agricultural extension services, distance, and transaction costs. With an odds ratio of 1.062 and a P-value of 0.000, the factor of age was found to be statistically significant at a significance level of 1 percent. The bank account was improved as a direct result of the variable’s effect.

The findings indicate that an increase in a household’s age is associated with an increase in the likelihood that the household will require formal financial services; the odds of a household requiring financial services such as a bank account vary by 1.062 for each year that a household reaches an older age. Elderly persons, in comparison to younger ones, typically have a better understanding of the relevance of financial products and services. Age was found to be one of the numerous factors that affect financial inclusion, and numerous academics who investigated the factors affecting financial inclusion in Bangladesh, such as Uddin et al. (2017), concluded that age was one of those factors. Their findings supported these findings. The data also demonstrated that one of the most important aspects that play a role in determining financial inclusion is the size of the household. The variable had a (P-value, of 0.000), and an odds ratio of 0.749, both of which were significant at a level of significance equal to one percent. According to the data, the probability that a family will require banking services and goods like a bank account will reduce by around 0.749 units if the size of the family changes. This is because the size of the household affects the number of people living in the household. It was found that households with more individuals have a higher probability of being poor, which can later limit their capacity to participate in the financial market. These findings were consistent with the previous researchers who concluded that larger households have a higher likelihood of being poor.

A large family will likely spend most of their income on things other than saving and will put very little of it down for the future. This may be what’s causing the harmful effect on financial inclusion (Klebanov et al., 1994; Lanjouw and Ravallion, 1995). The findings also demonstrated that the proportion of a household’s income that comes from non-farm sources can have a positive influence on financial inclusion. Both the variable’s P-value, which was 0.000, and its odds ratio, which was 1.003, were significant at the 1% level of significance, which is the lowest level of significance. According to the data, the probability of a change in demand for financial services and goods such as bank accounts increases by 1.003 for every unit increase in off-farm income.

Numerous more pieces of research, such as those conducted by Nwara et al. (2011), Musabanganji et al. (2015), Chandio et al. (2017), Baiyegunhi and Fraser (2014), and Chakraborti & Sanyal, reinforce the conclusions that an individual’s degree of income influences their level of financial participation (2015). In addition, the results demonstrated that the agriculture extension service variable was significant at a level of significance of 5% (P-value, 0.013), with an odds ratio of 0.464. This was the case when compared to the other variables. The unreliable agricultural extension service has a detrimental effect on the ability of people to participate in the financial system. According to the data, the likelihood of a household having a bank account is higher among those households that make use of agricultural extension services as opposed to those households that do not make use of these services. Families that did not participate in the agricultural extension program had a probability that is 0.464% lower of needing financial goods as compared to households that did participate in the program.

Households that did not employ the services of agricultural extension workers may have had a lower possibility of requesting financial goods. This is because agricultural extension workers provide farmers with the education that they can use in their farming operations. Education encourages involvement among farmers since it makes them familiar with a greater variety of financial instruments. To
explain the factors that lead to financial inclusion among smallholder farmers, one of the significant variables was the distance to the nearest financial institution. The p-value for this variable was 0.007, which indicates that it was significant at a level of significance equal to one percent.

In contrast to situations in which financial institutions are located a significant distance from homes, shorter distances typically encourage households to make use of financial services (Soumaré et al., 2016; Zulfiqar et al., 2016). The magnitude of the impact that proximity to a financial institution has on financial inclusion can vary depending on the distance between the home and the institution. According to the data, the probability of being asked for a bank account will increase by a factor of 1.106 for every unit that is subtracted from the distance between the two points. The findings have been supported by many scholars. Irankunda and van Bergeijk (2020), for example, probed the variables influencing financial inclusion among Rwanda's informal sector workers. They found that having a financial institution close to where the street vendor lives to support the idea that improved infrastructure is crucial to increasing financial inclusion. This finding lends support to the notion that better infrastructure is necessary to increase financial inclusion.

Both Oboh and Kushwaha (2009) and Kiiza and Pederson (2001) found that the chance of households, particularly rural households, participating in formal financial markets is affected by the closeness of the household to a financial institution. The research also found that transaction fees had a significant effect on people's access to financial services. At a significance level of 1%, the odds ratio of the variable was 0.900, which indicated that it was a significant factor (P-value, 0.000). The impact that transaction costs have on financial inclusion could either be positive or detrimental. When the transaction costs are low, however, households are encouraged to use financial organizations like banks. On the other hand, when the transaction costs are high, it is very difficult for households to utilize financial institutions like banks.

When it comes to households engaged in agriculture, every unit change in transaction costs results in a 0.900 percentage point decrease in the likelihood that these families will use financial services. The findings suggest that higher transaction fees make it less probable for families to engage in the financial market. This, in turn, influences the degree to which individuals have access to financial services. The findings have been validated by the research of Uddin et al. (2017), Soumaré et al. (2016), and Oyelami et al. (2017), who found that high transaction costs can function as a barrier to financial inclusion.

**Conclusions**

Inclusion in financial systems is one of the most pressing issues facing the globe today. More and more organizations, financial institutions, and people in positions of authority are showing an interest in gathering additional information about it. The prevalence of financial exclusion has been cited as one of the socio-economic issues that have to be addressed by a significant number of industrialized and emerging nations. The purpose of the study was to investigate and analyse the factors that influence the financial inclusion of smallholder farmers in Zimbabwe. The results of a logit model indicated that the factors that had a significant impact on whether a household had access to financial services were the following: the size of the household, the off-farm income of the household, the agricultural extension service, the distance, and the transaction costs. According to the research results, it is typically crucial to guarantee that the government and banking service providers start reducing the distance and time to the closest banking institutions by setting up access points close to the homes. This can be done by reducing the number of miles travelled to reach the nearest banking firm. These access points might be situated in growth hubs, such as major supermarkets, gas stations, or convenience stores, for instance. There is potential for profit for smallholder farmers if they had easier access to formal financial institutions. One of the factors that may dissuade families from using financial services is the possibility of incurring additional fees. Therefore, the providers of financial services are obligated to carry out regular charge evaluations. This article is providing crucial information about the financial inclusion of smallholder farmers in Zimbabwe, which is hence making a significant contribution to the advancement of scientific knowledge. The current study was only conducted in Zimbabwe; nevertheless, it would be a significant contribution to academic knowledge if, in the future, other authors could replicate the current study on a regional basis, for example across the entirety of Africa.

**Acknowledgement**

I would like to use this opportunity to extend our deepest gratitude to the University of Johannesburg for providing me with the priceless administrative support we required to finish the paper. The author has read and agreed to the published version of the manuscript.

**Author Contributions:** Conceptualization, methodology, validation, formal analysis, investigation, resources, writing—original draft preparation, writing—review and editing by author.

**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** The data presented in this study are available on request from the corresponding author. The data are not publicly available due to restrictions.

**Conflicts of Interest:** The author declares no conflict of interest.

**References**

Abel, B. B. (2020). Financial Inclusion in Burundi: The Use of Microfinance Services in Semi-Urban Areas. *Journal of Economic Development, 45*(3), 101-116. https://doi.org/10.35866/caujed.2020.45.3.005
Akileng, G., Lawino, G. M., & Ncibonerena, E. (2018). Evaluation of determinants of financial inclusion in Uganda. *Journal of Applied Finance and Banking*, 3(4), 47-66.

Altarawneh, Y., Al-Nuaimi, M., & Al-Nimri, A. (2020). The determinants of financial inclusion in Latin America and Europe (Brazil and Romania case). *Systematic Reviews in Pharmacy*, 11(12), 192-196.

Anoah, A., Korce, K., & Asiama, R. K. (2020). Mobile money as a financial inclusion instrument: what are the determinants? *International Journal of Social Economics*, 47(10), 1283-1297. https://doi.org/10.1108/IJSE-05-2020-0271

Anyangwe, T., Vanroose, A., & Fanta, A. (2022). Determinants of financial inclusion: does culture matter? *Cogent Economics & Finance*, 10(1), 2073656. https://doi.org/10.1080/23322039.2022.2073656.

Asuming, P. O., Osei-Agyei, L. G., & Mohammed, J. I. (2019). Financial inclusion in sub-Saharan Africa: Recent trends and determinants. *Journal of African Business*, 20(1), 112-134. https://doi.org/10.1080/15228916.2018.1484209.

Baiyegunhi, J. (2012). Hard choices: Financial exclusion, fringe banks, and poverty in urban Canada. *Journal of International Development*, 30(8), 1474-1504. https://doi.org/10.1002/jid.3376

Baiyegunhi, J. (2012). Hard choices: Financial exclusion, fringe banks, and poverty in urban Canada. *Journal of International Development*, 30(8), 1474-1504. https://doi.org/10.1002/jid.3376

Beck, T., Senbet, L., & Simbanegavi, W. (2015). Financial inclusion and innovation in Africa: An overview. *Journal of African Economies*, 24(3-11). https://doi.org/10.1093/jae/eju031.

Bozkurt, İ., Karakuş, R., & Yildiz, M. (2018). Spatial determinants of financial inclusion over time. *Journal of International Development*, 30(8), 1474-1504. https://doi.org/10.1002/jid.3376

Buckland, J. (2012). Hard choices: Financial exclusion, fringe banks, and poverty in urban Canada. *Journal of International Development*, 30(8), 1474-1504. https://doi.org/10.1002/jid.3376

Chakrabarti, S., & Sanyal, S. (2015). Heuristic Algorithm using the Internet of Things and Mobility for solving demographic issues in Financial Inclusion projects. http://arxiv.org/abs/1503.00369

Cicchiello, A. F., Kazemikhasragh, A., Monferrà, S., & Girón, A. (2021). Financial inclusion and development in the least developed countries in Asia and Africa. *Journal of Innovation and Entrepreneurship*, 10(1), 1-13. https://doi.org/10.1186/s13731-021-00190-4

Datta, S. K., & Singh, K. (2019). Variation and determinants of financial inclusion and their association with human development: A cross-country analysis. *IMB Management Review*, 31(4), 336-349. https://doi.org/10.1016/j.imb.2019.07.013

Demirgüz-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2020). The global Findex database 2017: Measuring financial inclusion opportunities and how to expand access to and use of financial services. *The World Bank Economic Review*, 34(Supplement_1), S2-S8. https://doi.org/10.1093/wber/lhz013.

Demirgüç-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2018). The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution. *World Bank Publications*. https://doi.org/10.1093/wber/lhz013.

Demirgüç-Kunt, A., & Klapper, L. F. (2012). Financial inclusion in Africa: an overview. *World Bank Policy Research Working Paper*, (6088). Available at SSRN: https://ssrn.com/abstract=2084599

Fernández-Olité, B., Martín, J. M. M., & González, E. P. (2019). Systematized literature review on financial inclusion and exclusion in developed countries. *International Journal of Bank Marketing*, 38 No 3, pp. 600-626. https://doi.org/10.1108/IJBM-06-2019-0203

Goebel, A. 2005. Gender and land reform: the Zimbabwe experience, *McGill-Queen’s Press-MQUP*.

Irakunda, D., & van Bergeijk, P. A. G. (2020). Financial Inclusion of Urban Street Vendors in Kigali. *Journal of African Business*, 21(4), 529-543. https://doi.org/10.1080/15228916.2019.1695182

Kiiza, B. & Pederson, G. 2001. Household financial savings mobilisation: Empirical evidence from Uganda. *Journal of African Economies*, 10, 390-409. https://doi.org/10.1043/jae/10.4.390

Klebanov, P. K., Brooks-gumn, J. & Duncan, G. J. 1994. Does neighbourhood and family poverty affect mothers’ parenting, mental health, and social support? *Journal of Marriage and the Family*, Vol. 56, (2) 441-455. https://doi.org/10.2307/353111

Lanjouw, P., & Ravallion, M. 1995. Poverty and household size. *The economic journal*, 105, 1415-1434. https://doi.org/10.2307/2235108

Leyshon, A., & Thrift, N. (1995). Geographies of financial exclusion: financial abandonment in Britain and the United States. *Transactions of the Institute of British Geographers*, 312-341. Vol 20(3). https://doi.org/10.1037/622654.

Mhlanga, D. (2021). Financial access and poverty reduction in agriculture: a case of households in Manicaland province, Zimbabwe. *African Journal of Business and Economic Research*, 16(2), 73. https://hdl.handle.net/10520/ejc-aa_ajber-v16-n2-a4

Mhlanga, D. (2020). Financial inclusion and poverty reduction: Evidence from small scale agricultural sector in Manicaland Province of Zimbabwe. (Doctoral dissertation, North-West University (South Africa)).

Mhlanga, D., & Denhere, V. (2021). Determinants of Financial Inclusion in Southern Africa. *Studia Universitatis Babes-Bolyai Oeconomica*, 65(3), 39–52. https://doi.org/10.2478/suboec-2020-0014

Mhlanga, D., & Dunga, S. H. (2021). Financial Inclusion in Agriculture: Lessons From Zimbabwe. *Academy of Accounting and Financial Studies Journal*, 25, 1-12 https://doi.org/1528-2635-25-S2-10
Musabanganji, E., Antoine, K. & Lebailly, P. (2015, November) Determinants of Access to Agricultural Credits for Small Scale Farmers in the Southern Province of Rwanda. *Book of Proceedings Sixth International Scientific Agricultural Symposium “Agro Sym 2015”*, 2015. 1815-1820. https://hdl.handle.net/2268/190058

Ndanshau, M. O., & Njau, F. E. (2021). An empirical investigation into demand-side determinants of financial inclusion in Tanzania. *African Journal of Economic Review*, 9(1), 172-190. https://www.ajol.info/index.php/ajer/article/view/201733

Ndanshau, M., & Frank, N. (2021). Empirical Investigation into Demand-Side Determinants of Financial Inclusion in Tanzania. *African Journal of Economic Review*, 9(1), 172-190. https://www.ajol.info/index.php/ajer/article/view/201733

Nwaru, J. C., Essien, U. A., & Onuoha, R. E. (2011). Determinants of informal credit demand and supply among food crop farmers in Akwa Ibom State, Nigeria. *Journal of Rural and Community Development*, 6(1).

Oboh, V. U., & Kushwaha, S. (2009). Socio-economic determinants of farmers’ loan size in Benue State, Nigeria. *Journal of applied sciences research*, 5(4), 354-358.

Ndanshau, M. O., & Njau, F. E. (2021). An empirical investigation into demand-side determinants of financial inclusion in Tanzania. *African Journal of Economic Review*, 9(1), 172-190. https://www.ajol.info/index.php/ajer/article/view/201733

Ozili, P. K. (2020). Financial inclusion research around the world: A review. *Forum for Social Economics*. https://doi.org/10.1080/07360932.2020.1715238

Ozili, P. K. (2021, October). Financial inclusion research around the world: A review. In Forum for social economics Vol. 50, (4), pp. 457-479. Routledge.

Rashdan, A., & Eissa, N. (2020). The determinants of financial inclusion in Egypt. *International Journal of Financial Research*, 11(1). Available at SSRN: https://ssrn.com/abstract=3649051

Sanderson, A., Mutandwa, L., & Le Roux, P. (2018). A review of determinants of financial inclusion. *International Journal of Economics and Financial Issues*, 8(3), 1.

Sarma, M. (2008). Index of financial inclusion (No. 215). Working paper.

Sinclair, S. P. (2001). Financial exclusion: An introductory survey. CRISIS, Edinburgh College of Art/Heriot-Watt University.

Soumaré, I., Tchana Tchana, F. & Kengne, T. M. 2016. Analysis of the determinants of financial inclusion in Central and West Africa. *Transnational Corporations Review*, 8, 231-249. https://doi.org/10.1080/19186444.2016.126576

Tinta, A. A., Ouédraogo, I. M., & Al-Hassan, R. M. (2022). The micro determinants of financial inclusion and financial resilience in Africa. *African Development Review*, 34(2), 293-306. https://doi.org/10.1111/1467-8268.12636

Uddin, A., Chowdhury, M. A. F. & Islam, M. N. (2017). Determinants of Financial Inclusion in Bangladesh: Dynamic Gmm & Quantile Regression Approach. *The Journal of Developing Areas*, 51, 221-237. https://www.jstor.org/stable/26415735

World Bank (2022) Financial Inclusion Available at: https://www.worldbank.org/en/topic/financialinclusion/overview

Zulfiqar, K., Chaudhry, M. A. & Aslam, A. 2016. Financial inclusion and its implications for inclusive growth in Pakistan. *Pakistan Economic and Social Review*, 54, 297. https://www.jstor.org/stable/26616711.

**Publisher’s Note:** SSBFNET stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.

© 2022 by the authors. Licensee SSBFNET, Istanbul, Turkey. This article is an open-access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (http://creativecommons.org/licenses/by/4.0/).