ADFJ ISSN 2522 - 3186.

African Development Finance Journal

VOLUME 5 (3)

Dynamic Analysis of Determinants of Financial Inclusion in Tanzania: Binary Logistics Model

Zawadi Ally

Date Received: March, 01, 2023 Date Published: June, 07,2023

Dynamic Analysis of Determinants of Financial Inclusion in Tanzania: Binary Logistic Model

By: Zawadi Ally[1]

Abstract
Financial inclusion is an important instrument in poverty alleviation and the promotion of a country's financial prosperity and there is a consensus that financial inclusion is the key driver for economic development. However, few studies have focused on drivers of financial inclusion for developing countries such as Tanzania. This motivated this study, to investigate the potential determinants that influence financial inclusion in Tanzania by using the Dar es Salaam region as a case study. A survey method was used to collect data from a sample of 384 respondents and then the binary Logistic regression model was used to analyze the data through SPSS. The results revealed that income, age, education, and gender are the main drivers of financial inclusion. The level of income, age, and education level are found to have a positive and significant impact on financial inclusion. Based on the findings the study recommends that the best financial inclusion strategies and policies have to be built by policymakers around these identified drivers to improve the welfare of society through the improvement of financial inclusion in the country.

Keywords: ***Binary logistic regression, Drivers of financial inclusion, Financial Services, Financial inclusion***

Introduction

Financial inclusion is one of the essential aspects of the financial system in the present scenario for socio-economic growth and development and it has become an important study area at the national and international level with regulators, financial institutions, and the government (Amoah et al, 2020, Mhlanga & Denhere, 2020). The presence of financial inclusion has been recognized by most countries as one of the financial system challenges on their agenda (Mhlanga & Denhere, 2020; Wentzel et al., 2016). Many countries use financial inclusion as a tool of the financial system to achieve more equitable economic growth (Kusuma, 2020). Financial inclusion is one of the main goals set by the United Nations (UN) as the Millennium Development Goals (MDG) in achieving sustainable development and improving world welfare (Kusuma, 2020). In many countries, the importance of financial inclusion is widely recognized in the financial system and become a financial policy priority. Financial inclusion plays a crucial role in building a strong foundation financial system of a country, which in turn will facilitate the country's economic growth (Kusuma, 2020). Financial inclusion is one of the tools for poverty reduction and the promotion of financial prosperity in most countries. Easy access to and availability of financial services will assist the society leaving in a lower-income area, to save their money safely and assist in preventing

[1] *Accounting and Finance Department, The Institute of Finance Management (IFM), Tanzania, E-mail: zawadikadunda@gmail.com*

the economic power to be concentrated to a few individuals, hence minimizing the risks the poor could face during the period of economic shocks (Singhal & Arora, 2018). Therefore, access to financial services improvement is becoming a crucial area of concern for most countries due to its economic and social implications. The evidence globally has shown that to achieve inclusive economic growth in a country, the expansion of financial inclusion to all sections of society is of utmost importance (Singhal & Arora, 2018).

Access to basic financial products and services such as savings, payments, insurance, and credits can make a substantial positive difference in improving poor society, (Dupas & Robinson, 2009). In Tanzania, financial inclusion is a relatively new socio-economic concept that aims to change this dynamic by enhancing access to financial services in society at affordable costs to the underprivileged, who might not otherwise be able to afford these services. According to Fin Scope, (2017) in Tanzania efforts on improving the access to financial services have resulted in 65% of Tanzanian adults being financially included. The study shows that out of this 16.7% are using formal bank services, 48.6% are not directly using bank services but rather are using other formal financial services, and 28.0% are completely excluded from the financial services. Recently financial inclusion concept has become an essential financial policy agenda globally due to its impact on many countries' socio-economic growth and development. This is very important in emerging markets and particularly in developing countries such as Tanzania where penetration rates of banking services are relatively very low. This is mainly due to the African traditional drivers such as low education level, low-income level, being a woman, distance from access to financial services and living in a rural area (Clamara et al, 2014). In this regard, financial inclusion services have been recognized as a prerequisite to economic growth and poverty reduction. In the context of Tanzania, the financial system reforms of the 1990s, led to significant developments in the financial sector, increasing the number of banks and financial services. However, despite the increase in financial services, the level of access to such services for Tanzanians remained very low. Therefore, there is a need for a comprehensive study focusing on financial inclusion in Tanzania.

Research Problem

Financial inclusion is considered one of the important tools in poverty reduction and the promotion of countries' financial prosperity. Bauchet et al., (2011) suggested that financial inclusion positively and significantly influences business activities, household consumption and self-employment. Karlan & Zinman (2010) found that access to financial services increased food consumption, borrowing well-being

and income in South Africa. The study conducted by the World Bank (2012) suggested that financial inclusion positively influences financial stability. Access to financial services is essential in the financial system and it has become a crucial topic on the global financial policy issue for sustainable socio-economic development. Therefore, the importance of an effective inclusive financial system as an effective intervention strategy for a country's economic development has widely been recognized in the policy discourse and has become a policy priority in Tanzania (Sanya & Olumide (2017). There is a general view that financial inclusion is an important factor in economic development. Despite, the important role of financial inclusion plays in economic development, few empirical studies exist that analyse the determinants of financial inclusion from the microeconomic perspective by quantifying the impact of different factors on participation in the formal financial system (Tuesta et al., 2015). Therefore, more studies in this area are needed especially in developing countries such as Tanzania. This scenario motivated the present study, to investigate the drivers explaining financial inclusion in Tanzania using the Dar es Salaam region as a study case and thus providing a framework against which financial inclusion policy can be formulated and implemented to increase access to financial services in the country.

Research Objectives

The overall objective of this study is to investigate the potential determinants of financial inclusion in Tanzania. The main objective was to examine the drivers of financial inclusion in Tanzania the case of the Dar es Salaam region. The specific objectives of the study were:

i) To examine the effect of income level on financial inclusion in Tanzania
ii) To examine the effect of age on financial inclusion in Tanzania
iii) To determine the effect of employment level on financial inclusion in Tanzania
iv) To determine the effect of education level on financial inclusion in Tanzania
v) To determine the effect of gender on financial inclusion in Tanzania
vi) To determine the effect of distance on financial inclusion in Tanzania

Literature Review

Theoretical literature review

The theoretical literature review of financial inclusion is highlighted in this section. Demirguç-Kunt et al (2014) defined financial inclusion as the process of ensuring all financially deprived businesses and individuals are access to financial services transparently and at an affordable fairly price by institutional

players. In the theoretical view of financial inclusion Schumpeter (1911) developed the theory of economic development, his theory argued that financial intermediaries provide significant services such as saving mobilizing, project evaluating, managing risk, transactions facilitating and managers monitoring and these services are crucial for economic development and technological innovation. This argument indicates that the financial industry assists to promote efficiency and innovation of investments which support growth through the financial services and also assists the accessibility of formation. The financial growth theories postulate that effect of supply or demand leads to growth through a creative environment and financial development. Income inequality as well as the lack of access to financial services create low growth. The significant role played by the financial system in economic growth has still controversial on the theoretical ground because some researchers support the role of the financial system in economic growth while others argue that the financial system doesn't have a significant impact (Manzoor & Amjad, 2022). Goldsmith, (1969) and Mckinnon (1973) argue that economic growth is positively influenced by affordable financial services and efficient financial systems. Thus, according to this argument, the development of an efficient financial system is a key driver for increasing economic growth. Sharma (2016) argues that there is a positive relationship between overall country growth and access to financial services.

Empirical Literature Review

One of the objectives of financial system restructuring and reforming is to improve the level of financial inclusion. However, the extent of access to financial services is lower in less developed counties compared to developed countries. Some specific groups of society still lack access to financial services in less developed countries (Beck et al, 2008). The study by Dar et al, (2020) examined the determinants the access to financial services in India by employing the database of Global Findex of the year 2017 and revealed that income, age, and gender drove access to financial services in India. Gebrehiwot et al, (2019) in a study that used 27 African countries examined the drivers of financial inclusion using the GMM panel data. The findings revealed that mobile infrastructure and Gross Domestic Product (GDP) per capita positively influence access to financial services. Zins et al., (2016) also in their study using the World Bank's Global Findex database of 37 African countries investigated the determinants of financial inclusion and found that education and income determine financial inclusion. The study of Zins et al (2016) supported by Sanderson et al (2018) examined the drivers of financial inclusion in Zimbabwe and found that education level, age, income, internet connectivity, and financial literacy are the drivers influencing financial inclusion. Kaur et al (2020) in their study in India by employing the logistic regression model investigated the determinants

of accessing non-institutional and institutional finance across female and male-headed households and found that education was one of the essential drivers affecting financial inclusion. Mhlanga and Dunga (2020) supported the study conducted by Sanderson et al (2020). In their study, Mhlanga and Dunga (2020) examined the access to financial services among small farmers in Zimbabwe and the findings showed that financial literacy, income, distance, education, and age of the society significantly influenced the financial inclusion among the smallholders. Kostov et al (2015) also in their study examined the role of households' behaviour on the financial inclusion process in South Africa and found that aspirations and financial literacy are important determinants of financial inclusion and gender also matters for financial inclusion. Allen et al (2016) in their study of financial inclusion provide evidence of country characteristics explaining financial inclusion. The findings showed that strong contract enforcement, High-quality institutions, political stability, and efficient legal rules influence financial inclusion.

Despite the growth of empirical literature on financial inclusion in developing countries a great deal should be done to improve the comprehension of why selectivity exists in the use of different types of services. This behaviour is likely to affect the pattern of distribution of financial services. There are many variables recognized in the financial inclusion literature that would offer possible determinants of financial inclusion. Some of these determinants have not been analyzed to the scarcity of data.

Based on the discussed literature review above the following drivers explaining financial inclusion were presented in Table 1 below

Table 1: Determinants of financial inclusion

Factors	Sources
Income	Dar et al., (2020): Zins et al., (2016): Mhlanga and Dunga (2020)
Age	Dar et al., (2020): Mhlanga and Dunga (2020): Sanderson et al. (2018)
Employment	Wokabi and Fatoki (2019): Sanderson et al. (2018
Education	Zins et al., (2016): Kaur et al., (2020): Mhlanga and Dunga (2020)
Gender	Dar et al., (2020): Kostov et al., (2015): Kaur et al., (2020)
Distance	Mhlanga and Dunga (2020)

Source: A literature review

Research hypotheses

Based on the empirical literature review discussions above this paper developed six research hypotheses to investigate the determinants of financial inclusion in Tanzania. The paper is particularly interested to examine the impact of income, age, employment, education level, gender, and distance on financial inclusion in Tanzania. The research hypotheses are presented in Table 2 below.

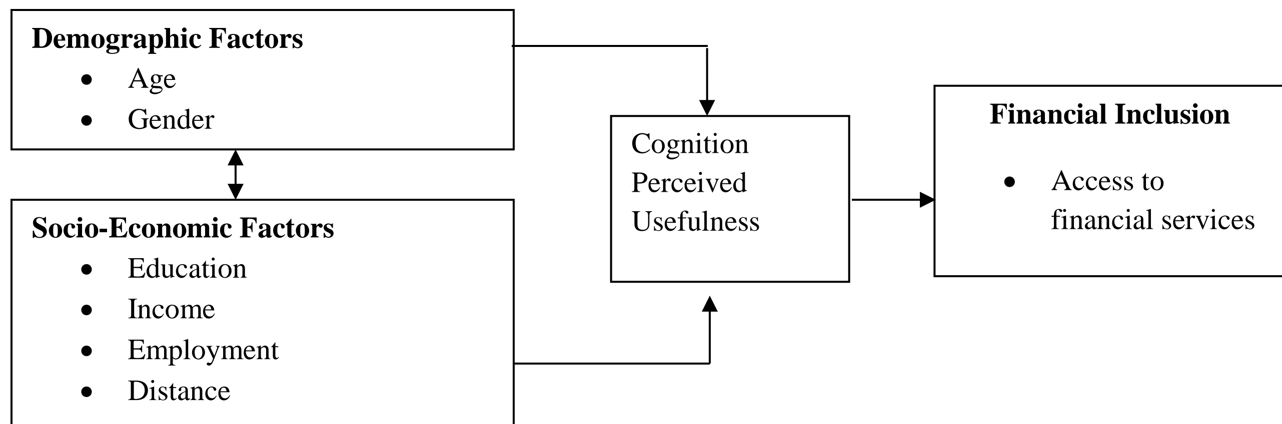
Table 2: List of Research Hypotheses

No	Research Hypotheses
H_1	Income level influences financial inclusion in Tanzania
H_2	Age influences financial inclusion in Tanzania
H_3	Employment influences financial inclusion in Tanzania
H_4	Education level influences financial inclusion in Tanzania
H_5	Gender influences financial inclusion in Tanzania
H_6	Distance influences financial inclusion in Tanzania

Conceptual Framework

The overall objective of this study is to investigate the potential determinants of financial inclusion in Tanzania. The main objective was to examine the drivers of financial inclusion in Tanzania the case of the Dar es Salaam region. The main theme of this study was to understand the potential determinants of financial Inclusion in Tanzania and to what extent influences access to financial services in the country. In this conceptual framework, the key variables were grouped into two groups, demographic factors which included age and gender and socio-economic factors which included education, income, employment and distance to explain the financial inclusion. Financial inclusion was presented by access to financial services. (Figure 1).

Figure 1: Conceptual Framework



Methodology

This paper adopted two main approaches to obtaining information for the realization of study objectives. The study used both qualitative and quantitative approaches to generate the required information. This study applied an explanatory research design to examine the drivers that influence access to financial services in Tanzania. The fundamental principle of using both qualitative and quantitative is that such integration allows more complete and synergistic exploitation of data than separate quantitative and qualitative data collection and analysis.

Study Area and Sample Size

The study was conducted in the Dar es Salaam region, the region was been strategically selected because it is one of the most important cities in Tanzania where a large number of financial institutions have been established to provide financial services compared to regions in the country, in addition, the number of people owning mobile phones is higher compared to other regions. The target population of the study includes selected wards, bank institutions, mobile phone providers, SACCOS, Youth and women groups, community and local governments official, and informal groups in the Dar es Salaam region. This study applied the probabilistic two-stage stratified sampling procedure because the sampling frame was unknown and it was not practical to complete the elements list composing the study population. The sampling divided the population into homogeneous subgroups known as strata, based on the population's geographical location, and then the samples were selected from each subgroup employing simple random techniques to ensure a sufficient number of samples were chosen from each subgroup. The probabilistic two stages

stratified sampling method was selected by this study was due to reason that the technique gave each population element an equal probability of getting into the sample (Oshora et al., 2021). It is very complex to measure the sample size from the population some of the factors should be considered such as degree of certainty, margins for errors, and statistical technique. Therefore, the sample size of the study is directly proportional to the desired level of confidence estimates (z), variability of the phenomenon is measured and it is inversely proportional to the study error that is being accepted by the authors (Oshora et al., 2021). Therefore, Fisher et al., (1991) formula was applied to determine the sample size of this study presented below:

$$n= Z^2Pq/d^2 \quad (3.1)$$

where:

n = the sample size required

z = the degree of confidence (i.e. 1.96)

p = the probability of a positive response (0.5)

q = the probability of a negative response (0.5)

d = the tolerable error (0.05)

Thus, the sample size of the study was calculated as follows:

$$n = (1.96)^2 (0.50.) (0.5)/ (0.05)^2$$

$$n = (2.706025 X 0.25)/ 0.0025$$

$$n= 384$$

Data Collection Methods

For the study analysis purposes, both primary and secondary data were adopted by this study. The questionnaires were used in this study to collect primary data. The survey for this study was conducted between July and September 2022. To achieve the study objectives the relevant questions with close-ended types of questions were asked in the questionnaire measured by a 5-point Likert scale format, ranging from strongly disagree (1) to strongly agree (5) on the average result to the ordinal values for all five variables where the respondents could fill them easily. In total, 400 questionnaires were administered to the target respondents. Out of which, 286 questionnaires were received representing a 71.5% response rate. In addition, 12 questionnaires were removed due to ineligibility, incompleteness, and outliers. Therefore, 274 (68.5%) questionnaires were considered usable questionnaires and considered an effective response rate. As suggested in the literature 30% is considered an acceptable response rate for any analysis in the social

science study (Linus, 2001). The questionnaires were used to collect the primary data from the respondents and were analyzed using different statistical techniques. The study also employed secondary data which was collected from a review of relevant materials including individual officers, financial policy, acts, journals, and official reports available by visiting both published and unpublished documents from selected financial institutions.

Model Specification

The binary Logistic regression model was used to assess the determinants of financial inclusion. The dependent variable was the probability of access to financial service (i.e. Financial inclusion) which lies between 0 and 1 such that, 0= if not accessed financial credit; and, 1= if accessed financial credit).

Following Gujarati (1995), the logistic distribution for access was specified as $Pa = 1/(1 + e^{Y_i})$

(1)

Where; Pa is the probability of access to a financial service, e- represents the base of natural logarithms Y_i - is the function of a vector of explanatory variables such that:

$Y_i = b_0 + \sum b_i X_i + \mu$ i=1 (2)

Y- An underlying and unnoticed stimulus index for the ith household, i- Observations on variables for the access to finance, b_0 –is the constant term, b_i - are the unknown parameters to be estimated, n -the number of explanatory/independent variables identified for the objective, u - is the error term following regression assumptions

If Pa is the probability of access to finance, the probability of not access to finance is 1-Pa; using equation 2 above it can further be expressed as:

$1\text{-}Pa = 1\text{-} 1/(1+e^{-Yi}) = e^{-Yi}/(1+e^{-Yi}) = 1/(1+e^{Yi})$ (3)

The Odd ratio for equations 1 and 3 can be expressed as

$Pa/1\text{-} Pa = 1+e^{Yi}/(1+e^{-Yi}) = e^{Yi.}$ (4)

Where Pa/1- Pa (odd ratio) defines the probability of access to not access on financial credits/service

The logit model is expressed by taking the natural logarithm of the odd ratio

$Pi = Ln\,(Pa/1\text{-} Pa) = Ln\, e^{(b0 + \sum biXi)} = Yi = b_0 + \sum b_i X_i + u$ i = 1 (5)

Where Pi, is the log of the odds ratio i.e. Logit Pi for access to financial services. By introducing the error term (u) for specified determinants to access then the logit model is expressed as:

$Logit\ Pi = Ln\,(Pa/1\text{-} Pa) = b_0+b_1X_1+b_2X_2+ \ldots\ldots\ldots\ B_5X_5+b_6X_6+u$ (6)

$X_1, X_2 \ldots X_6$, represents a set of determinants of access to finance as defined in Table 2. $b_1, b_2 \ldots b_6$, represent the magnitude of change of determinants.

Table 3 below provides a summary of the descriptions of the operationalization for Determinants of financials and their expected effect.

Table 3: Operationalization of Variables

Variables	*Theory behind*	*Descriptions*	*Sign*
Income (x_1):	*Inclusion to access financial services (financial system) occurs in persons who belong to high-income groups (Kempson and Whyley, 1998).*	*Annual income generated (amount of household income)*	+
Age (x_2)	*The inclusion of access to financial services (financial system) is highly favoured by low-aged individuals (Connolly and Hajaji, 2001)*	*Age of household head (number of years of household head)*	+
Distance (x_3)	*People living close to financial centres are more likely to be included in financial services (Leyshon and Thrift, 1995)*	*Walking distance/time to the closest financial centre*	-
Employment (x_4)	*Formally employed individuals are more likely to be included in financial services*	*Employment status (0- Self-employment, 1- Formal employment)*	+
Education (x_5)	*Educated individuals are more likely to be financially included*	*Increase in the level of education of the household head*	+
Gender (x_6)	*Male-headed families are highly accessed to financial services*	*Gender composition of household heads (0- Male, 1-Female)*	+

Results and Discussions

Validity of the Research Instrument

Validity analysis is an assessment of how efficiently a research tool that is developed measures a particular construct it is intended to measure (Sekaran and Bougie 2013). To determine the internal consistency reliability and validity of all the constructs of this study was used the coefficient alpha (Cronbach's alpha) composite reliability (CR), and average variance extracted (AVE) as suggested by Lihniash, et al, (2019). If the alpha value is 0.70 or higher, then the instrument is considered reliable (Hair et al. 2014). The alpha value was calculated using the PLS-SEM algorithm in Table 4 below.

Table 4: Construct Reliability and Validity

Constructs	*CR*	*AVE*	*R Square*
Income (X_1)	*0.854*	*0.562*	
Age (X_2)	*0.868*	*0.563*	
Distance (X_3)	*0.986*	*0.698*	
Employment (X_4)	*0.876*	*0.578*	
Education (X_5)	*0.972*	*0.681*	
Gender (X_6)	*0.864*	*0.568*	
Financial Inclusion	*0.942*	*0.589*	*0.781*

The results summarized in Table 4 above composite reliability and average variance extracted of all constructs as computed were shown above the threshold of 0.7 and 0.5, respectively. Therefore, it is established that all the construct was measured by the selected indicators which confirmed the validity and reliability of the research instrument.

Demographic Characteristics of Respondents

The summary results of the demographic characteristics of respondents were presented in Table 5 below. The results showed that the majority of the respondents were males, (72%,) and the remaining respondents were females (28%). Out of this composition, around 44% of the male and 14% of the female were included in financial services. The findings indicated that access to finance impacted most of the respondents aged between 31 to 45 years at 29.4%, followed by the ages between 16 and 30 at 17.6%. Very few (0.3%), mostly elderly respondents, had access to financial services. Regarding education, most of the respondents who accessed financial services had a primary level of education (34%). These were to large extent (61%) found handling household matters during the field survey. Likewise, very few respondents who had attended secondary, college, and graduate/postgraduate levels were equally in a position to access financial services. In the same trend, a similar case was realized for those without formal education.

Table 5: Demographic variables

Variable	*Access to Finance*		*Total*
	Yes	*No*	
Gender			
Male	*43.9%*	*28.0%*	*72.0%*
Female	*14.3%*	*13.7%*	*28.0%*
Overall	*58.2%*	*41.8%*	*100.0%*
Age			
16-30	*17.6%*	*9.4%*	*27.0%*
31-45	*29.4%*	*18.5%*	*47.9%*
46-60	*10.6%*	*11.5%*	*22.1%*
Above 60	*0.3%*	*2.7%*	*3.0%*
Overall	*57.9%*	*42.1%*	*100.0%*
Education			
No formal	*2.7%*	*5.7%*	*8.4%*
Primary	*34.2%*	*27.0%*	*61.3%*
Secondary/High School	*8.7%*	*8.1%*	*16.8%*
College/Vocational	*8.4%*	*1.2%*	*9.6%*
Postgraduate/Graduate	*3.9%*	*0.0%*	*3.9%*
Overall	*58.0%*	*42.0%*	*100.0%*

Results on Determinants of Financial Inclusion

The results of model fitness are presented in Table 6 below. A best-fit binary logistic regression model was applied to picture the predators of access to financial services. The results indicated that the factors considered were very significant to predict the model for access to financial inclusion (p-value <0.05), as were closely associated (Prob> χ^2 =18.884); and explained by 78.1% of the variability in the binary logistic regression model (Table 4.3). This implied that 78.1% of the variation in access to financial services (financial inclusion) was explained by the combined explanatory variables (income, age, distance, employment status. Education, and gender). This indicated that the model strongly fits the estimated explanatory variables to access financial services in Tanzania.

Table 6: Model fitness

Tests of Model		*Prob> χ^2*	***Df***	***Sig.***
Coefficients (Omnibus)	*Step*	*18.884*	*10*	*.042*
	Block	*18.884*	*10*	*.042*
	Model	*18.884*	*10*	*.042*
Model Summary		*-2 Log-likelihood*		*Nagelkerke R Square*
		31.169		*.781*

The estimation results of the determinants to access financial services employing the logit model were presented in Table 6. The findings of the study revealed a positive and significant relationship between financial inclusion and income. The level of income among the respondents was a significant variable at 95% of the actors of financial services (p-value <0.05) as was expected by the study, as the level of income increases it is expected that access to financial services will increase too. This finding was similar to the findings of Dar et al., (2020), Zins et al., (2016), Wokabi and Fatoki (2019), and Mhlanga and Dunga (2020) which found a positive and significant relationship between financial inclusion and income. The findings also indicated that individual age had a positive and significant effect on financial inclusion as expected. Results indicated a significant influence of age to access to financial services (p-value < 0.05). Society tends to understand the importance to access financial services as they grow up. The findings of the study supported previous studies such as the studies of Sanderson et al., (2018), Dar et al (2020), Mhlanga, and Dunga (2020). Unlike income, the findings showed that the distance and barriers of the respondents in the society had no significant impact on access to financial services in financial centres (p-value>0.05). This study hypothesized that people living close to financial centres were more likely to be financially included (Leyshon and Thrift, 1995). This count did not work among the communities in Tanzania probably due to the improved road network that reduced the time to reach the service centres. For the case of employment, the respondents were classified as self or formal/institutional or government employees, the two classes were developed to assess whether either of the statuses could influence the community toward access to financial services. Based on this concern, analysis of responses revealed a non-significant impact of employment status on the community’s ability to access financial services (p-value>0.05). The variable was not significant in determining the levels of financial inclusion in Tanzania. Concerning the education levels, the formally educated household respondents were assessed against those who have no formal education when access to finance was considered. The findings indicated that the level of education had a positive and significant effect on access to financial services (p-value < 0.05). This implied that an educated

community can quickly comprehend various financial services (Sanderson et al. 2018). The findings supported the studies of Kempson (2006), and Mhlanga and Denhere (2020). The results between financial inclusion and gender revealed a significant relationship, however, gender had a negative effect on financial inclusion. This implied that financial inclusion declined as far as females were concerned. This finding was consistent with the concept that men are the family head in most family setups in Tanzania. The findings showed that financial services demand was higher for males than for females. The findings supported the studies of Sanderson et al. (2018) and Mhlanga and Denhere (2020).

Table 7: Drivers of financial inclusion-logit estimates

Variables	*B*	*S.E.*	*Wald*	*df*	*Sig.*	*Exp(B)*	*95% C.I. for EXP(B)*	
							Lower	*Upper*
Gender (X_6)	*-1.512*	*1.160*	*1.699*	*1*	*.024*	*.935*	*.467*	*2.036*
Age (X_2)	*.0588*	*.060*	*.920*	*1*	*.037*	*.944*	*.839*	*1.062*
Education (X_5)	*.038*	*.229*	*.028*	*1*	*.027*	*.962*	*.615*	*1.507*
Employment (X_4)	*-.157*	*2.056*	*.006*	*1*	*.939*	*.855*	*.015*	*48.115*
Income (X_1)	*.1876*	*0.3262*	*4.492*	*1*	*.000**	*1.000*	*1.000*	*1.000*
Distance (X_3)	*.045*	*.091*	*.243*	*1*	*.622*	*1.046*	*.875*	*1.250*
Constant	*16.189*	*15409.596*	*.000*	*1*	*.999*	*10739317.844*		

Source: authors * indicates significance at a 5% probability level

Conclusions and Recommendations

This paper sought to analyze the potential determinants of financial Inclusion in Tanzania, and to what extent this will assist in wider the knowledge of financial policies designed to improve financial inclusion in Tanzania. The study was conducted in the Dar es Salaam region, and qualitative and quantitative approaches were used to generate the required information. The binary Logistic regression model was used in this study to assess the determinants of financial inclusion. In line with the study objectives, this study used income, age, education, employment, distance, and gender as the drivers of financial inclusion. The study found that income, age, and education were positive and significantly influenced financial inclusion. This implied that these were the main factors explaining the access to financial services. The results of the study showed that improved access to financial services through income and better education will assist in improving financial inclusion and minimizing the level of poverty in the country. Essentially efficient and

effective financial inclusion in the country is not only for the development of the financial system but also an important financial engine of the country's socioeconomic growth.

What policy implications can we draw from this study? Based on the results of this study. The best financial inclusion strategies and policies have to be built and implemented around these identified drivers to promote financial inclusion in the country. In this study, four factors namely income, age, education, and gender were revealed as the major drivers of financial inclusion with the level of income carrying the most impact on financial inclusion. The policymakers should well understand these drivers and build better financial inclusion strategies to ensure better results. Also, to ensure that financial services are easily and more accessible to a large population financial institutions should adopt modern technologies such as mobile banking.

The limitation of this study first was its geographic boundary as all the respondents belonged to the Dar es Salaam region only and second the study was only focused on investigating the determinants of financial inclusion and their effect on financial inclusion. Future studies should consider employing more robust financial inclusion drivers that capture the different aspects of financial inclusion. It is advised to consider other social-economic variables as drivers of financial inclusion. In addition, the sample size can be increased by including other regions to provide a more generalized result on the national level.

References

Allen, F., Demirgüc¸-Kunt, A., Klapper, L. & Peria, M.., (2016) 'The foundations of financial inclusion: understanding ownership and use of formal accounts' *Journal of Finance*. (forthcoming)

Amoah, A., Korle, K. & Asiama, R.K. (2020) 'Mobile money as a financial inclusion instrument: what are the determinants?' *International Journal of Social Economics*. vol. 47(10), pp. 1283-1297

Beck, T., Demirguc-Kunt, A., & Martinez, P, M. (2008) 'Reaching out: Access to and use of banking services across countries' *Journal of Financial Economics*, Vol. 85(2), pp. 234–266

Clamara, N., Peña, X. & Tuesta, D. (2014). Factors that Matter for Financial Inclusion: Evidence from Peru. Working Paper No. 14/09, pp. 1-26

Connolly, C & Hajaj, K (2001) "Financial Services and Social Exclusion" Chifley Research Centre, University of NSW, Sydney, Australia

Dar, A.B. & Ahmed, F., (2020) 'Financial inclusion determinants and impediments in India: insights from the global financial inclusion index. *Journal of Financial Economic Policy,* Vol. 6 (2), pp. 201–224

Demirgüç-Kunt, A., Kane, E. J., & Laeven, L. (2014). Deposit insurance database (No. w20278). National Bureau of Economic Research.

Dupas, P, & Robinson, J (2009) 'Savings Constraints and Microenterprise Development: Evidence from a Field Experiment in Kenya', NBER Working Papers 14693, National Bureau of Economic Research, Inc

Fin Scope Tanzania (2017) Insights that drive innovation, Financial Sector Deepening Tanzania (FSDT)

Gebrehiwot, K.G. & Makina, D., (2019) 'Macroeconomic determinants of financial inclusion: Evidence using dynamic panel data analysis' *In Extending Financial Inclusion in Africa'* (pp. 167-191). Academic Press

Goldsmith, R.N. (1969) Financial Structure and Development. Yale University Press, New Haven.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014) 'A primer on partial least squares structural equation modeling (PLS-SEM) (1st ed.). Los Angeles: Sage.

Kaur, S. & Kapuria, C., (2020) "Determinants of financial inclusion in rural India: does gender matter" *International Journal of Social Economics*. Vol 47 (6), pp. 747-767.

Kempson, E. (2006) "Policy level response to financial exclusion in developed economies: Lessons for developing countries" Washington DC: World Bank

Kempson, E., & Whyley, C. (1998). Access to current accounts. London: British Bankers Association

Kostov, P., Arun, T. & Annim, S., (2015) "Access to financial services: the case of the "Mzansi" account in South Africa" Rev. Dev. Finance Vol. 5, pp. 34–42.

Kusuma, R (2020) "The Impact of Financial Inclusion on Economic Growth, Poverty, Income Inequality, & Financial Stability in Asia". Vol. 7 (10)pp. .73-85

Leyshon, A & Thrift, N (1995) "Geographies of Financial Exclusion: Financial Abandonment in Britain and the United States" *Institute of British Geographers*, vol. 20, (3) pp. 312-41.

Lihniash, S., Egdair, I., & Ahmed, S. (2019) 'The Proposed Conceptual Framework to Understand the Effect of the Technology Organization Environment (TOE) Model on Internet Financial Reporting (IFR) in Libyan Banking Sectors' *Open Journal of Business and Management*, Vol. 7(2), pp. 339-347

Manzoor, S, & Amjad, A (2022) " A Survey on Financial Inclusion: Theoretical and Empirical Literature Review" *Journal of Policy Research (JPR)*, vol. 8, (4) pp. 310-330

Mckinnon RI (1973) Money and Capital in Economic Development. Brookings Institute, Washington Shaw.

Mhlanga, D, & Dunga, S. (2020) 'Measuring Financial Inclusion and Its Determinants Among the Smallholder Farmers in Zimbabwe: An Empirical Study' *Eurasian Journal of Business and Management*, Vol. 8(3), pp. 266–281.

Mhlanga, D., & Denhere, V., (2020). "Determinants of Financial Inclusion in Southern Africa" *Studia Universitatis Babeş-Bolyai. Oecono*mica, *Vol 65 (3) pp. 39-52*

Oshora, B, Goshu D, Eva G, Maria F, & Zoltan Z. (2021) 'Determinants of Financial Inclusion in Small and Medium Enterprises: Evidence from Ethiopia'. *Journal of Risk and Financial Management*, Vol. 14: 286. pp 1-19

Oshora, B., Fekete-Farkas, M., & Zeman, Z. (2020) 'Role of Microfinance Institutions in Financing Micro and Small Enterprises in Ethiopia' *Copernican Journal of Finance & Accounting*, Vol. 9(3), pp. 115–130.

Sanderson, A., Mutandwa, L., & Le Roux, P. (2018) 'A Review of Determinants of Financial Inclusion' *International Journal of Economics and Financial*. Vol. 8, (1) pp. 34-58

Sanya, O., & Olumide, F. (2017). Financial Inclusion as an Effective Policy Tool of Poverty Alleviation: A Case of Ekiti State. IOSR Journal of Economics and Finance (IOSR-JEF), Vol. 8(4), pp. 1–10.

Schumpeter, J.A. (1911) The Theory of Economic Development. Harvard University Press, Cambridge.

Sekaran, U. & Bougie, R. (2013) 'Research methods for business. A skill-building approach (5th ed.). UK: John Willey

Sharma, D. (2016). Nexus between financial inclusion and economic growth: Evidence from the emerging Indian economy. Journal of financial economic policy

Singhal, A & Arora, B (2018) "Financial Inclusion: Importance in India". Ideal Journal of Management & IT. Vol IX, pp. 17-20

Wentzel, J.., Diatha, K. & Yadavalli, V. (2016) 'An investigation into factors impacting financial exclusion at the bottom of the pyramid in South Africa. Development Southern Africa' Vol. 33, pp. 203-214.

Wokabi, V. W. (2019) 'Determinants of financial inclusion in East Africa' *International Journal of Business and Managemen*t, vol. 7(1), pp. 125-143,

Tuesta, D., Sorensen, G., Haring, A., & Camara N. (2015) "Financial inclusion and its determinants: the case of Argentina" Working Paper, No 15/03.

Zins, A. & Weill, L., 2016. 'The determinants of financial inclusion in Africa'. *Review of Development Finance*, Vol. 6(1), pp.46-57.