

# Financial Inclusion And Quality of Livelihood in Zimbabwe\*

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## Abstract

The study sought to establish Zimbabwe's financial inclusion level, its determinants and whether the country's financial inclusion levels have influence on access to basic income, food, health and education services. We estimate an overall financial inclusion rate of 58% for adult Zimbabweans and 33% when access to and use of banking services only is considered. Among the major determinants of financial inclusion are income, financial literacy and the geographical presence of financial institutions. With regard to the link between financial inclusion and livelihood indicators, we find that greater financial inclusion promotes access to basic income, food, health and education for households for the country, with the differential effect of inclusion becoming wider when banking instead of total inclusion is considered. We recommend that the country needs aggressive financial inclusion strategies to reduce access vulnerabilities and poverty.

**Keywords: Finance, Income, Food, Health, Education, Poverty**

**JEL D53, E44, G21**

## 1 Introduction

There is wide consensus among development economists that finance matters for development and that a well developed financial system offering widely available, accessible and affordable financial services to individuals and households promotes more inclusive growth and better livelihoods (Allen et al. 2012, Park and Mercado Jr 2015). Ironically,

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however, there seem to be a tragedy of highly urbanized financial systems that exclude the majority of people from accessing financial services co-existing with high poverty and income inequalities in most developing countries, especially in Africa (Allen et al. 2012, 2014). Motivated by this observation, this study considers Zimbabwe's case, assessing the country's level of financial inclusion and how it has influenced access to basic incomes, food, health and education services for individuals and households.

Greater financial exclusion; obtaining when a large proportion of a country's population has no access to the financial sector's products, services and systems, implies lower savings mobilization and investment than a country's full potential. As a result of financial exclusion, income generation and wealth accumulation by the excluded individuals becomes weak resulting in high incidences of poverty and income inequalities (Park and Mercado Jr 2015, Patrick 1966). Principally, greater financial inclusion reduces transaction costs for households and individuals. It increases the interface between banks and clients and lowers financing risks and costs for the marginalized individuals and sectors such as agriculture and microenterprises. In addition, greater financial inclusion improves liquidity and returns on the unbanked's wealth portfolios as they shift away from physical to financial savings (Patrick 1966). Promoting financial inclusion, therefore, promotes wealth creation on one hand and addresses income inequalities for the unbanked segments of the society.

Despite the importance of financial inclusion as a driver of growth and income equality, the African continent continues to have significant proportions of individuals and households without access to even basic financial services, with at least 80% of adults in Sub-Saharan Africa being unbanked compared to an average of 50% for the world, less than 60% for Asia and 8% for the developed countries (Chaia et al. 2009, Allen et al. 2014). The low rates of financial inclusion, therefore, partly explains why despite the relatively high returns on investments in Africa, its growth remains low while poverty and income inequalities are relatively high.

For Zimbabwe, which is our focal point, only 30% of adults are estimated to be formally banked as of 2014 (FinScope 2014). Consequently, there are significant access vulnerabilities for a significant percentage of the country's population, with 60% of the population estimated to be going without income for daily life needs and at least 44% without money for food (FinScope 2014). These statistics are worrisome, given the positive association between financial inclusion and poverty reduction suggested by Park and Mercado Jr (2015). Confirming the importance of financial inclusion for poverty reduction, the government of Zimbabwe has put in place a National Financial Inclusion Strategy to promote access to and use of financial services by the country's unbanked individuals and households (RBZ 2016b).

Zimbabwe is a motivating case for our study for a number of reasons. First, until

the late 1990s, the country had one of the most developed and diversified financial sector in Africa with a wide bank branch network after the financial sector reforms instituted in 1991<sup>1</sup> (Mowatt 2001). Second, since the abandonment of the Structural Adjustment Programme in the mid 1990s, the country has had a number of bank closures and mergers as well as significant bank restructuring involving bank branch streamlining. Last, like many other African countries, most banks in the country are highly concentrated in urban areas, leaving a significant proportion of the population in the rural and semi-urban areas unbanked (Allen et al. 2014). These attributes present good variations in the country's financial inclusion across individuals and geographical areas that enable us to address the study questions. The facts suggest the existence of significant financial exclusion, with far reaching potential effects on poverty and access to livelihood basics worthy studying.

To address the study's research questions, we use household data sourced from the 2014 FinScope Consumer Survey. The novelty of the study lies in undertaking a more rigorous and evidence based analysis of financial inclusion and its effects on wellbeing for a country where studies on the subject matter remain scanty. Previous studies on the subject have their own weaknesses, which we try to address. For example, there is no clear strategy in the 2014 FinScope report to deal with multiple counting for individuals who access financial services multiple times and or from multiple institutions. In addition, the broad definition of inclusion emphasized and utilized by the report fails to isolate effective financial inclusion which directly relates to aspects of poverty. This study avoids multiple enumeration of multiple access to financial services by individuals when estimating financial inclusion and separately considers overall financial inclusion from banking inclusion in estimating the effects of financial inclusion on wellbeing to assess the differential effects of broader financial inclusion from bank inclusion.

In overall terms, the study has findings suggesting that the major constraints to increased financial inclusion are lack of income, geographical distance to financial institutions, weak financial literacy and poor financial capabilities; and that greater financial inclusion promotes access to basic income, food, health and education services and that much of the differential effects of inclusion are explained by banking inclusion other than by other forms of inclusion. We recommend that there is need for the country to embark on more aggressive strategies and policies that promote financial inclusion and job creation capabilities.

The rest of the paper is organized as follows. Section 2 outlines developments in Zimbabwe's financial sector. Section 3 discusses some related literature on the financial

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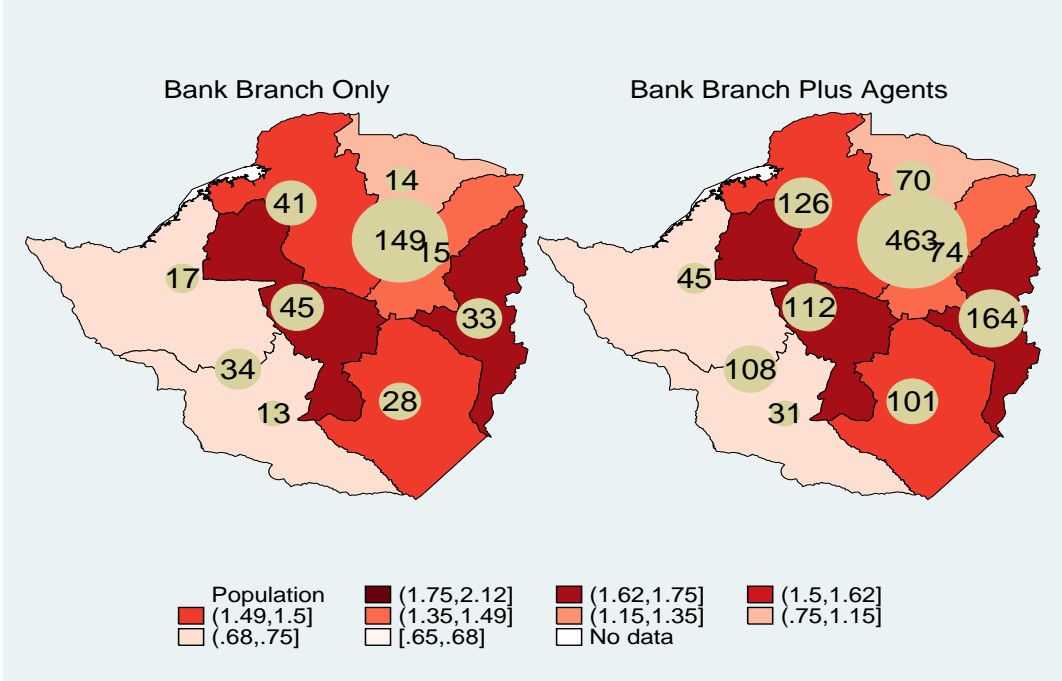
<sup>1</sup>The reforms, which were part of the World Bank/IMF supported Structural Adjustment Programme (SAP), involved interest and exchange rate liberalization, banking sector deregulation and desegmentation, a shift away from non-market monetary policy orientation towards market based policies, among the major reforms.

inclusion and human development while section 4 gives the model framework for the relationship between financial inclusion and human development. Section 5 outlines the study methods while section 6 discusses the data used. Sections 7 and 8 provides the study results while section 9 discusses possible policy indicators that emerge from the study and section 10 concludes the study.

## 2 Zimbabwe’s Financial Sector in Perspective

At the end of 2015, Zimbabwe’s financial sector had 19 banks, 16 Asset Management Companies (AMCs) and at least 158 microfinance institutions (RBZ 2016a)<sup>2</sup>. In total, the country had about 400 bank branches countrywide, excluding agents. However, the country’s banks and bank branches are highly geographically concentrated in urban areas, with at least 80 percent of the bank branches located in urban areas and only 20 percent in rural areas<sup>3</sup>. The country’s two major cities; namely, Harare and Bulawayo host close to 50 percent of the country’s total bank branches. Figure 1, which maps the

Figure 1: Zimbabwe Population Distribution and Bank Branch Network



country’s population and bank branch distribution illustrates that tyhe country’s

<sup>2</sup>Banks were constituted as 13 commercial banks, 4 building societies, 1 merchant bank and 1 savings bank

<sup>3</sup>Urban areas are constituted by the country’s five major cities; namely; Harare, Bulawayo, Gweru, Mutare and Masvingo; and the urban areas of Kadoma, Kwekwe, Chegutu, Victoria Falls, Hwange, Beitbridge, Kariba, Gwanda, Chinhoyi, Bindura, Marondera and Rusape. When banking agents are included, the network of bank presence increases to about 1300 bank brances and agents, countrywide and the presence of banks in rural areas improves to about 30%.

bank branch distribution does not mirror the country's population distribution for which 67 percent of the population lives in rural areas<sup>4</sup>. The picture portrayed by figure 1, clearly informs on the degree to which most households and individuals in Zimbabwe's rural areas are likely to be excluded from accessing and utilizing financial services and the risks to exclusion induced poverty they are exposed to. The report by FinScope (2014), for example, estimates that 77% of rural Zimbabweans were unbanked and at least 81% of them have problems accessing income to buy basic requirements.

The evolution of Zimbabwe's financial sector leading to its 2015 state has seen the sector going through episodes of positive and adverse shocks in line with the country's policies, the macroeconomic environment and other sector specific developments. Until the financial sector reforms that were implemented as part of the wider IMF/World Bank supported Economic Structural Adjustment in 1991, the country's financial sector was largely foreign owned, highly regulated, segmented and mostly urban based. The advent of sector reforms instituted in 1991 changed the face of the sector significantly. The sector became more liberalized, diversified and open to ownership, especially with regard to domestic and indigenous ownership<sup>5</sup>. As a result, the sector became more competitive, with entry of new institutions and expansion in bank branches as banks sought to maintain or enlarge their market shares.

The financial sector reforms had a positive effect on the country's rates of financial inclusion. By 2004, the total number of banking institutions had increased to 42, the highest in the country's history. The increase was driven mainly by indigenous and domestic ownerships. This inevitably meant improved financial inclusion as banks penetrated through to access new and traditionally unbanked areas and individuals in order to enhance or sustain their market shares. With the increased financial sector competition, the number of bank branches in the country reached an estimated 435 in 2004, driven by a spatial increase in the presence of financial institutions. Similarly, the increased sector de-regulation and de-segmentation resulted in greater diversity in terms of financial services and products offered by the sector. This meant that the previously financially excluded individuals had greater scope to access and utilize the services of the financial sector.

The increased number of banks, branches and competition in a more deregulated financial sector, however, also meant higher risk taking and at times weaker corporate governance practices by some financial institutions, posing risks of bank failures. Reflecting the effects high sector competition, increased risk taking and the general macroeconomic adverse shocks that beset the economy from the late 1990s to around

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<sup>4</sup>Estimates on population geographical composition are based on Zimbabwe's 2012 population census in which the country's population in 2015 is estimated at 14.5 million (ZimStat 2015)

<sup>5</sup>For example, the requirement for 30% minimum shareholding in banks and the amendment of the Banking Act in 2000 to allow commercial banks to undertake additional functions on their licenses

2009, the country experienced a series of multiple bank failures, mergers and branch rationalization. The adverse episodes commenced with the collapse of a merchant bank (United Merchant Bank) in 1997 whose contagion effect also weakened the balance sheets of other banks.

In 2004 alone, 9 financial institutions were put under curatorship due to a number of factors, including weak performance, excessive risk taking and poor corporate governance (IMF 2005). By the end of 2009, the number of banks in the country had fallen to 26, driven by liquidations or mergers. The adverse shocks on banks meant increased financial exclusion, with the country sliding backwards in terms of efforts to access and provide financial services to marginalized individuals and areas.

Figure 2: Zimbabwe Banking Sector Evolution (1990-2015)



Data Source: Reserve Bank (Various)

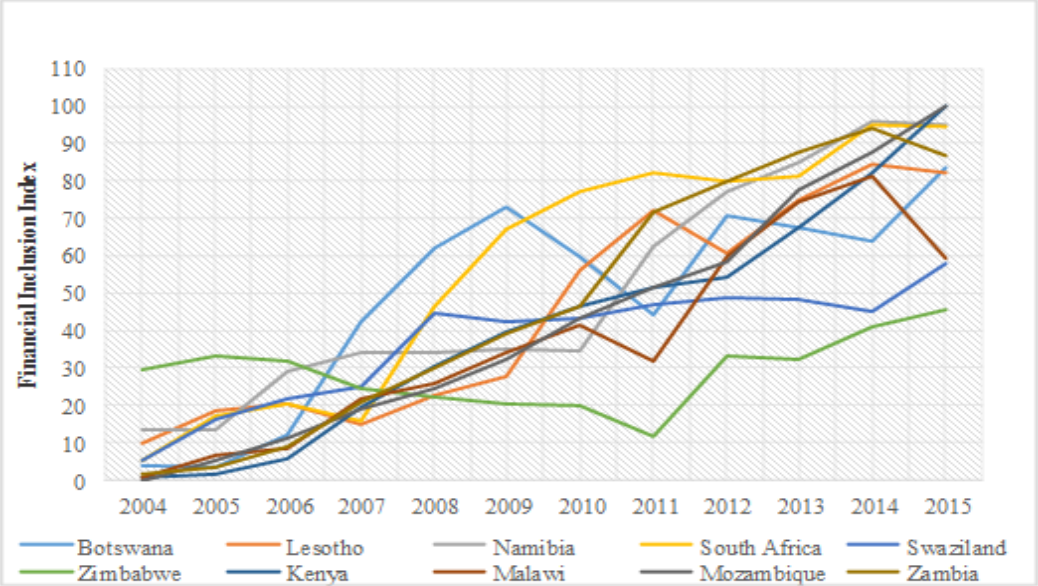
To the extent that when such shocks happen, it is the marginal banks and branches which are affected first, their adverse effects fell more on the rural populations, the agriculture sector and the micro and medium enterprises in the informal sectors who had found accommodation in the new banks and bank branch networking.

The gravity of the country’s financial sector challenges and the degree of lost financial inclusion becomes clearer when the evolution of Zimbabwe’s financial sector over time is compared with other countries in the region. Making the comparison using our own computed index of financial inclusion following the methods employed by Sarma et al. (2008) and Honohan (2008)<sup>6</sup>, the computed yearly indices are plotted in figure 2,

<sup>6</sup>See Annex for full details on the construction of the index. The computed indices combine bank branch networking, availability of Automated Teller Machines and access to borrowing and deposit facilities from banks. Unlike Sarma et al. (2008) and Honohan (2008), we computed the within country

which shows that Zimbabwe had significant losses in terms of financial inclusion between 2004 and 2011. Over the same period and beyond to 2015, other countries in the region progressed significantly well, gaining milestones in terms of financial inclusion.

Figure 3: Within Country Indices of Financial Inclusion



Data Source: WB (2017)

To the extent that financial inclusion impacts on well being, the portrayed financial sector developments for the country suggests that the average quality of life could have been improving for the rest of the region over the illustrated period while that of Zimbabweans had negative shocks.

### 3 Literature Review

The importance of financial inclusion with regard to incomes, poverty, income inequality and standards of living in general has been a centre of interest for long, with Patrick (1966) suggesting a number of channels linking financial development to wealth creation. A number of other studies have also echoed positive sentiments with regard to the important role played by greater financial development and inclusion (Park and Mercado Jr 2015, Brune et al. 2011, Allen et al. 2012, 2014) In his supply-leading model, Patrick (1966), suggests that the provision of financial services and systems to the financially excluded enables them to shift their wealth portfolio composition from

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indices over time from 2004 to 2015 to be able to assess the evolution of the indices over time. The computed index can, therefore, not be used to make cross sectional country comparisons. We have, however, computed the country cross section index presented in figure – in the Annex.

unproductive and low return forms such as traditional consumer durables, grain and livestock to more liquid, more productive and higher return financial assets.

Access to financial services, thus stimulates entrepreneurship, induces capital accumulation and enhances the wealth of those who are currently financially excluded. These views suggest that individuals in semi-urban and rural areas, agriculture and the informal sector with limited access to formal sector financial services are forced to keep their wealth mostly in physical products, commodities and livestock. To the extent that such wealth forms are illiquid, have low returns and are not easily transferable through financial intermediation, they deprive their holders of potential incomes and incremental wealth creation capabilities. Individuals with entrepreneurship capabilities can not access credit for investment while holders of physical wealth can not get meaningful returns on their savings. Provision of access to affordable financial services to the excluded individuals, therefore, avails more efficient forms of savings, allows the unbanked to borrow and venture into entrepreneurship and enhances their livelihoods.

Once the pace of financial inclusion has been set, there is usually a feedback mechanism which leads to further financial development and inclusion through demand following responses as the newly created enterprises require more financial services. The process of initiating greater financial inclusion can, therefore, self-perpetuating in creating more incomes, wealth and better living standards for the excluded in the underdeveloped areas, sectors and the whole economy at large. Plausible as this sounds, there remains significant proportions of populations in most developing countries going without basic financial services. Chaia et al. (2009) and Allen et al. (2012), for example, estimate that 80 percent of adults in Sub-Saharan Africa are unbanked. For Zimbabwe, only 81 Zimbabweans per 1000 adults have bank accounts with commercial banks compared to 156 for the low income Sub-Saharan Africa region in 2015 and 70% of the adult population are formerly unbanked as of 2014 (FinScope 2014, WB 2017).

A number of reasons have been suggested to explain the high rates of financial exclusion in most developing countries (Honohan 2008, Brune et al. 2011, Allen et al. 2014). First, usually the most excluded are the low income individuals and or households in marginal areas and activities such as the rural areas, those in agriculture, microenterprises and the informal sector at large. Allen et al. (2014), suggests that most banks in Kenya and other countries in Africa tend to be concentrated in urban areas where incomes and population densities are high for greater business opportunities and low operational costs. This implies greater financial exclusion for the low income individuals in the low density rural and marginal areas. Honohan (2008) notes that requirements such as minimum account deposits, permanent addresses and bank charges and penalties lead to high financial exclusion for the poor, while Brune et al. (2011) adds that high transactions costs in the form of substantial distances to banks,



costly and unreliable transport, mistrust towards formal financial institutions, low literacy and complex paperwork in banks are among the factors that hinder inclusion.

In addition, by their low income and wealth status levels and geographical dispersion, banks often find it more costly to access the majority of the unbanked populace. Moreso, the greater part of the unbanked and their enterprises have unknown financial and business history, which increase their risk rating when they attempt to borrow. These features amount to either availing financial access to them at higher costs than the established and financially included individuals and businesses. This implies that the financial excluded poor do not only suffer adverse shocks on living standards through lack of financial access, but may even face higher costs of access for those that attempt to access the services of the financial sector.

There is wide evidence suggesting that financial inclusion improves the quality of livelihoods. The causal mechanism is mostly through improved savings, access to credit and higher entrepreneurship. Using data on 72 developing and developed countries, Beck et al. (2008) suggests that financial development disproportionately increases incomes of the poor and reduces inequality for the poorest and attributes the growth in income to inequality reduction caused by greater financial development. The study, however, considers the impact of financial development on poverty and inequality at macro-level. The link between financial inclusion and the quality of livelihood at the micro level as directed in this study is, therefore, not straight forward from the study.

Combining macro-level and household level data to compute measures of financial inclusion, Honohan (2008) has evidence that support Beck et al. (2008), suggesting that increased financial inclusion reduces inequality in a study of 160 countries. The study, however, has no robust evidence suggesting that greater inclusion reduces poverty when per capita income is controlled for. It only reduces poverty in less developed financial markets. The major challenges with both studies lies in pooling a large cross section of heterogeneous countries and the likely endogeneities in the estimated relationships. These factors could have contributed to the estimated weak relationship between financial inclusion and poverty.

Burgess and Pande (2004) attempt to address the endogeneity problem by instrumenting rural bank branching with policy variation on bank branching between 1977 and 1990 for India and find results suggesting that increased financial inclusion in the rural areas reduces poverty in rural areas while keeping urban areas unaffected, with deposit mobilization and credit provision as the mediating channels. The results imply that increased financial inclusion for the marginalized does not necessarily crowd out the banked areas and individuals from development. It can be a win win strategy between banks, the excluded and included populations. We, however, note that by emphasizing on rural bank branching, Burgess and Pande (2004)'s study is too narrow

in its definition of inclusion. The definition only captures the supply side of inclusion, which may not necessarily coincide with use of financial services. This study broadly defines financial inclusion to incorporate both access to and of financial services, hence attempt to address these problems.

Studies by Brune et al. (2011) and Dupas and Robinson (2013) also attempt to address the problem of endogeneity by using randomized field experiments to determine the impact of financial inclusion on incomes and poverty. Brune et al. (2011) finds that increased financial inclusion improves committed savings, agriculture investment and agriculture productivity for financially excluded households in Malawi. Similarly, Dupas and Robinson (2013) finds that increased financial access for women micro-entrepreneurs in Kenya leads to greater business investment and higher incomes thereafter. However, the challenge with experiments is that they are usually based on smaller samples, they are sensitive to the assumptions behind the experiment and are not representative of the true reality of the intricacies of financial inclusion, poverty and wealth creation. Consideration of real relationships in data such as the household survey data employed in this study is critical in exposing the true ex post relationships between financial inclusion and quality of livelihoods.

## 4 Study Analytical Framework

There are multiple transmission channels linking financial inclusion or exclusion to the quality of livelihoods. The analytical framework envisages that the financially excluded individuals are unbanked, relatively poor, unemployed or in informal sector or agriculture and generally live in marginalized areas. Because they live in sparsely populated areas, are generally unknown and have unknown personal and business history, they are perceived to be riskier and more expensive to serve by financial institutions. Hence, due to market failures, they have limited or no access to savings and credit facilities of banks. Without financial inclusion the financially excluded may, therefore, remain in poverty trap.

However, to the contrary of the perceptions of the financial sector, the unbanked have potential and viable investment opportunities in small and micro-enterprises, agriculture, mining and trading, which if financed can create incremental wealth for the marginalized and improve their access to material life requirements. In the case of Zimbabwe and many other developing countries such activities are in metal works, market gardening, textile and cross border trading (Brune et al. 2011, Fafchamps et al. 2014, Dupas and Robinson 2013). Because investment in these sectors are lumpy, the financially excluded can not self-finance these business. Even if they they may have periodic surplus money, they do not have access to formal savings facilities to enable

them to build enough investible capital to pursue these business opportunities. Thus, despite the existing opportunities, the financially excluded may remain in perpetual poverty.

A break down of market failures in the financial sector through a supply leading initiative which promotes access and use of formal financial services should improve the quality of livelihoods of the excluded, especially those in rural areas, semi and peri-urban areas, the informal sector, and agriculture through formal savings accumulation, access to credit, capital accumulation and new entrepreneurs (Brune et al. 2011, Dupas and Robinson 2013, Patrick 1966).

## 5 Study Methods

### 5.1 Empirical Model Specifications

The study questions are addressed in two steps. In the first stage, we estimate the determinants of financial inclusion in Zimbabwe. This gives us possible indicators on financial inclusion policies. In the second stage, we estimate the relationship between financial inclusion and the indicators of livelihood. The indicators available in the utilised data set and used are access to income, food, health and education services.

#### 5.1.1 Determinants of Financial Inclusion

From the study theoretical framework, financial inclusion is determined by both demand and supply side factors, including general economic performance, policy, incomes, financial literacy and demographic as well as geographical factors. Because financial inclusion is binary, denoting inclusion or exclusion, the study employs the logit model in estimating its determinants. The general estimation model is specified as:

$$Prob(\textit{Financial Inclusion}_i|X_i) = f(X_i\beta + \varepsilon_i) \quad (1)$$

$$\textit{Financial Inclusion} = \begin{cases} 1 & \textit{Financially Included} \\ 0 & \textit{Financially Excluded} \end{cases}$$

The model estimates the proportion of those who have access to financial services, defined as those who have a deposit or loan account from a bank, a micro finance institution, a savings club or a mobile money service provider. Taking note of Honohan (2008)'s caution to avoid multiple enumeration of access to or use of financial services, an individual is counted as having access or use of financial services only once even if

he or she reports access to more than one the four institutions. In addition, transaction is not counted as separate access from having an account.

The variable financial inclusion is categorical, taking a value of one for the financially included individuals and zero for the excluded individuals. The inclusion proportion is estimated conditional on the various determinants of financial inclusion, captured by  $X_i$ . Determinants of financial inclusion summed under  $X_i$  and available in the utilized data set include income, education, whether one is in urban or rural areas, financial literacy, financial capability, age, marital status, distance to the nearest financial services provider and gender. The function,  $f$ , is the probability estimator, which in our case is the logit model<sup>7</sup>.

### 5.1.2 Financial Inclusion And Livelihood Indicators

The indicators of quality of livelihood considered by the study and available in the data set utilized are access to basic income, food, health and education. The consumer survey used has a question asking individuals to rate access challenges they have in their households with regard to basic income, food, health and education services. The responses to the question are coded in five ascending categories from total access vulnerability (1) if their household had access challenges more than 10 times in the past 12 months to complete access (5) if they never experienced any challenges.

Given that our dependent variables are categorical and ordered, we follow Cameron and Trivedi (1986) and use the ordered logit model to estimate the probability of an individual falling within each of the livelihood quality indicators conditional on their financial inclusion status and other covariates that affect outcomes of the indicators. The quality of livelihood indicator for individual  $i$  (represented by  $S_i$ , for security of access) is determined as a latent variable as:

$$S_i = \delta Inclusion_i + X_i\Pi + \mu_i \quad (2)$$

Where  $Inclusion_i$  is an individual's financial inclusion status and  $X_i$  is a vector of other factors that determine each of the livelihood indicators. Because the question on access vulnerability refers to household challenges, we combined individual and household level factors under  $X_i$ . The variables used and available in the data set are household wealth, household size, whether the individual's household is in urban or rural areas, age of the respondent and whether the household is female or male headed. From equation 2, the probability of an individual falling within any of the five categories (say  $j$ ) of each livelihood quality indicator is given as:

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<sup>7</sup>There is no special reason why we have chosen the logit model instead of the probit model other than its popular use in other similar studies

$$Prob(S_i = j) = Prob(k_{j-1} < \delta Inclusion_i + X_i\Pi + \mu_i \leq k_j) \text{ or} \quad (3)$$

$$Prob(S_i = j) = Prob(k_{j-1} - \delta Inclusion_i + X_i\Pi < \mu_i \leq k_j - \alpha Inclusion_i - X\Omega)$$

Where in equation 3,  $k$  is the estimated cut off point for the livelihood categories given the status of financial inclusion and other determinants of the livelihood indicator. Using the ordered logit model to estimate 3 assumes that, the error term,  $\mu_i$  in 2 is logistically distributed. The model results allow us to estimate and compare the proportion of financially included individuals falling in each livelihood quality indicator category and the proportion of the financially excluded individuals falling in the same categories, wherein the estimated proportions are determined as the marginal effects of financial inclusion and exclusion within each category of the indicator.

## 6 Data

The study uses data from the FinScope Consumer Survey for Zimbabwe, which was done between July and September 2014. The survey is based on the country's adult population defined as residence of Zimbabwe who are 18 years and above. The survey involved face to face interviews that were conducted on about 4000 individuals drawn from a geographically representative household sample drawn from 59 369 eligible households drawn by the country's national statistics agency, ZimStat (FinScope 2014).

The survey, which is the second wave following the first wave done in 2011, has rich individual and household level information and demographics on aspects that relate to financial inclusion, its determinants, landscape, access and access vulnerabilities and constraints. The information contained in the survey includes access to financial services and products, education and financial literacy, geographical distance to service centres and financial institutions, age, income, income source, wealth, sex, marital status, employment status and individual opinion rating access challenges for basic income, food, health and education. Important variables of this study are those on financial inclusion indicators and measures of livelihood at household and individual levels.

Financial inclusion is measured in terms of an adult individual having access to and use of financial services and products obtaining when an individual has an active deposit or loan account with a bank, or micro finance institution, cooperative or savings club or mobile money service providers. following Honohan (2008), we were cautious

to avoid multiple counting in establishing the proportion of those who are financially included. In this respect, an individual who accessed credit or savings services from multiple accounts or multiple institutions counts only once in the total financial inclusion ratio. We distinguished overall or total inclusion from what we call “banking inclusion”, wherein banking inclusion denotes access to a deposit or loan account from a bank. This allows us to assess the differential effects of overall inclusion and banking inclusion of livelihood quality. Access to other services such as insurance or investment accounts with insurance companies and asset managers was not separately counted as inclusion given that practically those that have access to these forms of higher level financial products are already included through at least one of the four channels listed above.

Quality of livelihood is measured as access challenges experienced in individuals’ household with regard to four basic living requirements; namely access to basic income, food, health and education. The four indicators of access challenges are obtained from a question asking individuals whether they have had challenges in accessing food, basic income, education and health facilities over the past twelve months<sup>8</sup>. The measure is categorical, taking values that are equal to 1 for individuals facing greatest challenges in accessing any one of the four and 5 for those without any challenges accessing them.

Other important variables are for financial literacy and financial capability. Financial literacy is the degree to which an individual understands the working of the financial market. The variable is categorical and divided into three categories, namely “illiterate (0)” for individuals without knowledge of any of capital markets, stock exchange, shares, unit trust and any other financial instrument; “moderately literate (1)”, for individuals with knowledge of at least one of the five; and “advanced literacy (2)”, for individuals who know all the financial assets and markets. Financial capability is a dummy variable, taking values of zero for individuals who do not do any financial planning such as budgeting and one for those who do plan.

Individual monthly income is the sum total of all the individual’s income from all his or her income sources over the last twelve month divided by twelve, while household wealth is an index summing up all the items constituting household physical assets. The index is constructed using the method of principal component analysis. Household size is measured as the number of members in a household. Distance to institution is the distance in terms of time taken to the nearest financial institution from where an individual lives. Education is measured as the number of schooling years for an individual while age is an individual’s age in years. To capture the effect of whether

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<sup>8</sup>This is captured by question Q1.15A of the questionnaire used under the sub-heading “challenge in meeting the basic necessities of life”. Responses to the question are coded as 1 for “always or 10 times or more”, 2 for “often: 5-9 times”, 3 for “sometimes: 3-4 times”, 4 for “rarely: 1-2 times” and 5 for “never”

one lives in urban or rural areas, we used the variable, “Urban”, which is a dummy variable taking a value of one if one lives in town and zero, otherwise. Marital status is a dummy variable for married individuals, taking values of one for the married and zero, otherwise. Gender is captured by a dummy variable “Male”, taking a value of one for males and zero for women. Tables 4 and 5 in annex, respectively present summary and correlation statistics for the study variables.

## 7 Results

### 7.1 Determinants of Financial Inclusion

Results in table 1 examine the relationship between overall financial inclusion a number of factors identified in the literature as influencing access to and use of financial services. Table 6 in annexure gives results for banking inclusion determinants for comparison purposes. The estimated models predict an overall financial inclusion ratio of 58% and a banking inclusion ratio of 33%. Given that the data used is cross sectional, the results are more on associational relationships than causality. However, given that we control for other determinants of financial inclusion, the estimated results are conditioned relationships between financial inclusion and each of its determinants after isolating out the effects of other factors. This contrasts the estimation of uncontrolled pairwise correlations as those reported in the 2014 FinScope report on Zimbabwe (FinScope 2014).

The first column of table 1 estimates financial inclusion conditioned on the log of individual income, while the second column controls for income and the effect of whether one is in the urban or rural areas (Urban). The variable “Urban” is interchanged with distance to the nearest financial institution in the third column capturing the effect of geography and spatial proximity to financial institutions. In the third column, we add education, financial literacy and financial planning capability to control for acquired personal attributes that may influence use of financial services. The fourth column is our most comprehensive model results, jointly controlling for all the determinants of financial inclusion. The column adds age, marital status and gender to control for the possible effects of demographic factors on financial inclusion.

From the results table 1, income consistently and significantly predict financial inclusion, with higher monthly income leading to greater access and use of financial services. On the basis of the comprehensive model results, a 1 percent increase in an individual’s monthly income increases average financial inclusion by at least 0.36 percent. The result confirms the FinScope report on Zimbabwe noting that income is a major constraint for financial inclusion for the country (FinScope 2014). However, to the extend

that financial inclusion itself is usually associated with greater income creation capabilities (see, Dupas and Robinson (2013)), the result also implies that supply leading policies that ensure greater financial inclusion and greater income generation should be self-perpetuating in creating further access and use of financial services.

Table 1: Determinants of Financial Inclusion

	(1)	(2)	(3)	(4)
	Fin Incl	Fin Incl	Fin Incl	Fin Incl
Log Income	0.653*** (0.034)	0.563*** (0.037)	0.352*** (0.037)	0.355*** (0.040)
Urban		0.559*** (0.086)		0.212* (0.098)
Distance to Financial Institution			-0.190*** (0.029)	-0.179*** (0.031)
Education			0.472*** (0.051)	0.617*** (0.059)
Moderate Financial Literacy			0.630*** (0.088)	0.600*** (0.090)
Advanced Financial Literacy			0.521* (0.256)	0.439 (0.268)
Financial Planning Capability			0.512*** (0.080)	0.533*** (0.080)
Age				0.020*** (0.003)
Married				0.050 (0.085)
Male				-0.030 (0.081)
Constant	-2.692*** (0.163)	-2.460*** (0.165)	-2.550*** (0.218)	-3.866*** (0.293)
<i>N</i>	3606	3606	3570	3570
<i>PseudoR</i> <sup>2</sup>	0.102	0.120	0.170	0.182
<i>Waldchi</i> <sup>2</sup> (..)	368	457	625	614

Robust Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

On the effects of geography and spatial proximity of financial institutions' effects, the estimated results suggest that individuals in urban areas have, on average, greater access to and use of financial services than those in rural areas. Individuals living in urban areas are 1.6 times more likely to access and utilize financial services than those in rural areas using the second column results. Similarly, there is a negative and significant relationship between financial inclusion and distance to the nearest financial institution, with average financial inclusion predicted to fall by about 0.2 percent for every hour increase in time taken to the nearest financial service provider. The result



suggests the importance of geographical access in influencing financial inclusion. It confirms findings by Allen et al. (2012) and implies that increasing the geographical presence of financial institutions across the country is critical in promoting financial inclusion.

The relationship between education and financial inclusion is positive and significant, suggesting that the more educated individuals are more likely to be financially included than otherwise. Likewise, financial literacy and financial planning capability enhance financial inclusion. As a matter of policy indication, the finding implies efforts that towards improved schooling levels and those that enhance the public's financial literacy and financial planning capabilities, e.g, educative campaigns about financial services and products availability, benefits of using financial services and systems, risks of not using the services and the importance of financial planning are critical in improving access and use of financial services. The suggestion by results in table 1 that moderate financial literacy has a stronger effect on inclusion than advanced financial literacy suggests that the policy effort and resources required to enhance financial inclusion for the country may not need to be much. It may be satisfying to embark on basic and simple educative investment into the process to attain significant public response in terms of use of financial services.

Among the demographic factors, age has a positive effect on financial inclusion, while marital status and gender do not have significant impact. The insignificance of gender, which is contradicts findings in most other studies (see, for example, Dupas and Robinson (2013), Allen et al. (2014)), is likely to be a result of the wider and more inclusive definition of financial inclusion utilized in table 1, which includes mobile money, savings clubs and microfinance access for which women are more likely to access and use. The estimated results for bank inclusion in table 6 in the annexure shows that men are at least 1.43 times more likely to be banked than women, confirms this argument an suggesting that campaigns for use of financial services should purposively ensure that access by women is encouraged.

The result on age is reflective of the high unemployment among the Zimbabwean youths dictating and forcing them to remain financially excluded while that on gender confirms the effects of gender imbalances and social restrictions on access and utilization of financial services by women (see, for example, Dupas and Robinson (2013), Allen et al. (2014)). The policy handles that emerge from the findings are point to the importance of job creation for the youths and women, including supply leading financial inclusion strategies targeted at the groups as well educative campaigns against social and gender discrimination and imbalances that restrict women's use of financial services.

## 7.2 Financial Inclusion and Quality of Livelihood

In this section, we consider the relationships between financial inclusion and four aspects of livelihood indicators; namely access to basic income, food, health and education services. The question driving this consideration is motivated by the view that financial inclusion is not an end in itself but rather a means to reducing poverty. Ending at looking at the determinants of financial inclusion would miss this important view. To assess the link between financial inclusion and the four livelihood indicators, we have estimated equation 3 and computed marginal effects of financial inclusion and exclusion in each of the five categories for which the indicators were rated by respondents. The estimated marginal effects of overall financial are presented in tables 2 and 3 below.<sup>9</sup>

We have already argued that depending on how financial inclusion is defined, there may be risks of linking quality of individual livelihoods to poverty neutral or ineffective forms of inclusion. The high lending costs on microfinance credit and limited lending by mobile money service providers and savings clubs, for example, are likely to render these forms of inclusion ineffective in dealing with poverty or enhancing the quality of livelihood (see Honohan (2008), Allen et al. (2014) for arguments on microfinance). On the basis of the data used in this study, for example, at least 40 percent out of the 58 percent of the financially included adults in Zimbabwe are exclusively included through mobile money and without access to and use of banking services, meaning that there are risks that some of the financially included individuals may still be living in relatively high poverty levels. Following this argument, we have also estimated and presented predicted marginal effects on access challenges on the four indicators using banking inclusion alongside those on overall financial inclusion in tables 2 and 3.

The first two columns of the results in the tables give the marginal effects of overall financial inclusion on each of the four indicators of livelihood. The first column gives the predicted proportion of individuals who are financially included and falling within each of the five ratings on the indicators while the second column relates to those that are financially excluded. The last two columns give corresponding estimates for banking inclusion, i.e for individuals that either have or do not have access to banking services, excluding those that are included through mobile money services, microfinance and clubs. Each row of the tables corresponds to some degree of access challenge for a given indicator of livelihood quality. Using table 2, for example, the estimated proportion of adult Zimbabweans who are financially included and vulnerable with regard to accessing basic income is 0.1493 (15%) and the corresponding proportion among the financially excluded is 0.248 (25%).

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<sup>9</sup>Full estimated results from which the marginal effects are computed are presented in tables 7 and 8 in the annexure.

From results tables 2 and 3, there are increasing access vulnerabilities with regard to basic income, food, health and education for individuals who are financially excluded after controlling for other determinants of access to the for indicators of quality of livelihood. Financially excluded individuals' households are 1.7 times more vulnerable in accessing basic income than those for financially included individuals. At the upper or most secure end, 31% of individuals who are financially included have no challenges accessing basic incomes compared to 18% for the excluded individuals. A qualitatively similar picture obtains with regard to food, health and education access although access vulnerability for the three are smaller compared to basic income access for both the financially included and excluded individuals. The difference confirms the impact of other interventions programs on access to livelihood basics such as government and humanitarian support for those facing vulnerabilities accessing food, health and education services; all of which are not explicitly controlled for in the estimated equations from which the presented marginal effectes are computed.

Table 2: Effect of Financial Inclusion on Access to Income and Food

	Risk	Overall Incl		Bank Incl	
	Degree	Included	Excluded	Included	Excluded
Basic Income	Vulnerable	.1493***	.2480***	.1043***	.2115***
		(.0062)	(.0089)	(.0074)	(.0067)
	Insecure	.1752***	.2315***	.1357***	.2138***
		(.0059)	(.0073)	(.0069)	(.0067)
	Neither	.1959***	.2034***	.1733***	.2048***
		(.0062)	(.0065)	(.0064)	(.0064)
Relatively Secure	.1686***	.1382***	.1731***	.1513***	
		(.0063)	(.0055)	(.0064)	(.0056)
Food Access	Vulnerable	.3110***	.1788***	.4135***	.2186***
		(.0085)	(.0073)	(.0161)	(.0065)
	Insecure	.0666***	.1265***	.0435***	.1036***
		(.0040)	(.0065)	(.0037)	(.0051)
	Neither	.1139***	.1835***	.0792***	.1590***
		(.0050)	(.0073)	.0054)	(.0060)
Relatively Secure	.1823***	.2320***	.1408***	.2182***	
		(.0060)	(.0072)	(.0068)	(.0067)
Secure	.1709***	.1683***	.1516***	.1732***	
	(.0060)	(.0060)	(.0060)	(.0060)	
	.4662***	.2895***	.5849***	.3459***	
		(.0096)	(.0093)	(.0162)	(.0078)

Robust Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 3: Effect of Financial Inclusion on Access to Health and Education

	Risk	Overall Incl		Bank Incl	
	Degree	Included	Excluded	Included	Excluded
Health Access	Vulnerable	.0330***	.0593***	.0210***	.0491***
		(.0029)	(.0046)	(.0023)	(.0038)
	Insecure	.1013***	.1603***	.0679***	.1390***
		(.0051)	(.0073)	(.0054)	(.0060)
	Neither	.1642***	.2137***	.1238***	.1985***
		(.0062)	(.0076)	(.0074)	(.0069)
Relatively Secure	.1950***	.2041***	.1728***	.2047***	
Secure	(.0065)	(.0068)	(.0073)	(.0068)	
	.5064***	.3624***	.6145***	.4086***	
		(.0101)	(.0106)	(.0177)	(.0084)
	Education Access	Vulnerable	.0607***	.0908***	.0398***
(.0040)			(.0057)	(.0036)	(.0047)
Insecure		.0941***	.1277***	.0670***	.1180***
		(.0047)	(.0064)	(.0049)	(.0055)
Neither		.1485***	.1797***	.1181***	.1725***
		(.0059)	(.0070)	(.0066)	(.0065)
Relatively Secure	.1334***	.1435***	.1183***	.1420***	
Secure	(.0055)	(.0059)	(.0058)	(.0059)	
	.5633***	.4583***	.6569***	.4868***	
		(.0095)	(.0113)	(.0155)	(.0084)

Robust Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Considering access to food, estimations show that 13% of the financially excluded individuals belong to households that are most vulnerable accessing food compared to about 7% for the financially included individuals while 47% of the financially included compared to 28% of the excluded have no challenges at all accessing food. Access vulnerability proportions for health and education for the financially excluded individuals are 6% and 9% compared to 3% and 6% for the financially included, respectively. At the upper end, 51% of the included compared to 36% of the excluded have no problems accessing education, while 56% of the included compared 46% of the excluded have not problems accessing education.

The differential effect of financial inclusion on the indicators of livelihood is generally bigger when banking inclusion as opposed to total financial inclusion is considered, confirming the view that access to and use of banking services is more effective in influencing material access and individual wellbeing. Across the for indicators of livelihood, for example, individuals that are excluded from accessing or utilizing bank services are at least twice most vulnerable in accessing income, food, education and health services while at most 40% of those with access to banking have access challenges for food,

health and education compared to 70% of those without access to banking services. An inclusion strategy which is blind to creating a more inclusive banking system with accessible products and services is likely to be illusory and ineffective if the ultimate objective of financial inclusion is poverty reduction.

At least two major conclusions emerge from the estimated results in this section. First, households for individuals who are financially excluded have greater access limitations and vulnerabilities for basic income, food, health and education while those who are financially included have highest access security. To the extent that the estimated models have controlled for other major determinants of the livelihood indicators, the differential effects can be attributed to financial inclusion and exclusion. Second, the differential effects of inclusion are wider when the definition of financial inclusion is narrowed to access and use of banking services, suggesting that inclusion or exclusion from banking services has greater welfare effects than inclusion through microfinance, savings clubs and mobile money services.

## **8 Policy Indications**

A number of policy indications emerge from the study, major among them being that there is need for aggressive promotion of financial inclusion for Zimbabwe as a strategy to enhance the quality of livelihood among its populace. The results suggest that there is need to pursue purposive strategy on financial inclusion spearheaded by promotion of access to and use of banking services for a more accelerated impact on poverty as opposed to a non-purposive promotion of financial inclusion driven by inclusion through other forms of inclusion. This makes policy sense given the wider financial services provided by banks, especially entrepreneurship credit that are either absent or thinly available under the other forms of financial inclusion. This view should, however, does not imply the irrelevance of the other forms of financial inclusion. They remain important and ancillary to mainstream banking inclusion, especially with regard to providing easy payments platforms and micro credit for the most marginalized forms of transactions.

### **8.1 Bank Use Promotion**

One of the major challenges facing financial inclusion in Zimbabwe and many other developing countries is low rates of utilization of financial services regardless of whether such services exist or not. Thus, despite the high rate of bank existence in all Zimbabwe's urban areas, utilization of banking services is relatively low with only 29% of adults living in urban areas having a bank account. This suggests that the major

policy issue for greater financial inclusion, possibly dominating the issue of increasing the spatial presence of banks, is to improve the use of financial services and products.

Increasing the use of financial services and products should embrace information sharing about options, ways and benefits of being financially included. Given that information is a public good, the government as well as financial institutions should engage in aggressive information production and dissemination, including campaigns and advertisements informing the public and reaching the marginalized about accessible financial services and products, how to access the services and the costs of being unbanked.

From the supply side, financial institutions should thrive to use more simplified and less costly banking procedures and systems that encourage use of financial services by the marginalized segments of the population. Such procedures include streamlined paperwork, optional use of local languages for bank transactions, use of alternative addresses for individuals without fixed addresses, differential minimum account balance requirements and bank charges on the basis of indicators of marginalization such as client's age, gender, type of accounts and geography.

## **8.2 Promoting Financial Literacy**

Promotion of use of financial services also requires improving financial literacy and financial planning capabilities. Over and above existing policies to enhance general schooling levels, there is need to reform the education system to incorporate curricula on finance and banking aspects. The government should consider making it mandatory for subjects that relate to banking and financial literacy; notably basic principles of business, banking and finance, to be taught in schools starting from as early as senior primary levels so that children are introduced to the culture and practice of banking and entrepreneurship at early stages of their lives.

In addition and also as a quick win strategy to improve financial literacy for the unbanked adults, the government, its development partners and financial institutions should consider running educative information dissemination campaigns and workshops across the country on financial inclusion. Such campaigns, whose objective should be to inform the public of the importance of financial inclusion, available services, products, banks and bank branches which they can access, steps and procedures of account opening and loan application as well as basics on entrepreneurship and financial planning, is meant to capture adults who are currently financially excluded due to lack of information.

### 8.3 Job and Entrepreneurship Creation

Because income has emerged as one of the major impediment constraining financial inclusion, there should be concerted efforts by government and private sector, especially banks to map out and institute effective employment and income creation strategies that ensure that the majority of the populace is economically active. Critical, on the part of financial institution, is to initiate a supply leading impetus earmarked for promotion of micro and small enterprises, commercial agriculture and trading for the traditionally marginalized and unbanked areas and individuals. Evidence from models for lending to the unbanked and marginalized suggests that once the right micro enterprises and projects are identified and matched with the right financial products, such supply leading strategies can be successful at least in the medium to long term (Brune et al. 2011, Fafchamps et al. 2014, Dupas and Robinson 2013). If this is the case, it follows that for Zimbabwe there should be a high financing business opportunity for banks availed by the prevailing high unemployment. Embarking on a supply leading initiative to finance the setting up of informal businesses, if well managed and persuaded, should be self-sustaining in future as incomes start to expand.

### 8.4 Expanding Bank Branch Network

Geographical factors; namely distance to the nearest financial and whether one is in urban or rural areas have emerged to be robust and significant determinants of financial inclusion. This suggests that policies that are meant to improve inclusion should consider spatially increasing the number of bank branches across the country, with greater attention in the rural areas and or the currently marginalized areas. India successfully managed to implement a policy of expanding bank branches into its rural areas through statutorily compelling banks to open some branches in unbanked areas for every new branch license applied for in an already banked area and the strategy significantly reduced poverty levels among the rural populace (Burgess and Pande 2004). The government of Zimbabwe should borrow a leaf from the strategy.

Immediate concerns that arise with regard to such a strategy relate to high operational costs and low business for such branches that threaten the branches' viability. There is, however, widespread evidence suggesting that where such supply leading impetus has been initiated, it motivates and generates entrepreneurship and income generation activities that in the long term may sustain the new financial institutions and branches (Patrick 1966, Allen et al. 2014, Brune et al. 2011).

For purposes of cutting on costs, the government can initiate the process by constructing shared infrastructure such as shared or communal small scale commercial malls or banking halls in all the country's service centres or where such infrastructure

exists, e.g the People's Own Savings Bank and Post and Telecommunication banking halls, for the case of Zimbabwe, they can be effectively used for the strategy to accommodate other bank branches given the halls' wider geographical presence across the country.

In extreme cases of unviability, banks should consider mobile and agent banking, offering comprehensive finance facilities on scheduled days of the month or week. What seem to be worrisome with almost all the existing agent banking facilities in the country is the limited amount of services they offer as well as their geographical concentration in the already banked areas, with about 70% of bank agents located in urban areas<sup>10</sup>. To worsen the predicament of the unbanked populations is the fact that most of the agents only provide deposit and payments facilities without credit services for the financially excluded, suggesting that deposits mobilized from them are mostly for the benefit of the already banked borrowers.

## 8.5 Bricks Versus Clicks

The restrictive costs of setting up new bank branches through the brick and mortar model requiring new physical construction of banking halls have prompted the call for resorting to the use of mobile and internet banking. The advantage of such forms of banking is that they constitute a quick strategy to improve financial inclusion while at the same time being efficient and effective in infrastructure use. Economies from effective use of infrastructure emanate from the fact that the model uses shared communication infrastructure, which is already widely accessible in almost all parts of the country.

There are, however, a number of challenges attached to internet and mobile banking that persuade the suggestion that the brick and mortar model remains relevant and more effective in improving financial inclusion in a country like Zimbabwe. First, internet banking does not provide the required interpersonal interaction and relationships between clients and banks necessary for provision of critical poverty reducing services such as easy saving and credit. The challenges are even escalated by the nature of the population categories of people that are already financially excluded for whom financial inclusion should purposively fight poverty through credit provision and effective low transaction costs.

Second, the 'clicks' model of financial inclusion is relatively delicate and sophisticated and requires ICT knowledge that is usually far beyond the comprehension of the marginalized and financially excluded individuals. In this respect, for example, even though 83% of adult Zimbabweans have access to household mobile phones, only 19%

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<sup>10</sup>Percentage computed from secondary data statistics collected on bank branches in the country



are estimated to use the phones for general internet while only about 9% use them for internet banking (see the 2014 FinScope Survey). At best, therefore, the clicks model of financial inclusion can only serve as an additional banking convenience for the already banked and financially literate individuals. It works better in more advanced countries with high literacy rates and ICT knowledge. The brick and mortar model remains crucial for Zimbabwe.

## 8.6 Expanding the Scope of Mobile Money Services

Given that non-banking institutions, especially the mobile money service providers and micro finance institutions, play a significant role in accessing and providing financial services to the unbanked segments of the population; they can be strategically used to target poverty reduction among the marginalized populations through expanding their services. In this respect, the systems and institutions should provide total banking services, including savings mobilization, credit provision and insurance services while the supervisory authority scale up the scope and methods of supervising them. The same should also be encouraged for bank agents, which currently mostly provide savings mobilization services only.

The fact that most of the mobile money service providers already undertake a significant proportion of total financial sector transactions and are linked directly or indirectly to the mainstream banks, they should already have an effect on banking sector liquidity and soundness<sup>11</sup>. Henceforth, formally allowing their expansion of services and tightening up their supervision is likely to improve the effectiveness of financial inclusion through these channels in poverty reduction while at the same time proactively safeguarding the stability of the financial sector from an already existing risk which they pose.

## 8.7 Reconsidering Models for Specialized Banks

The well narrated success stories of Equity Bank in Kenya (Allen et al. 2014) and Bangladesh's Grameen Bank (Khandker et al. 1995) in reaching out to the poor and traditionally unbanked segments of the population suggest that there maybe need for Zimbabwe and other developing countries in similar financial exclusion levels to reconsider the funding and financing models of its specialized institutions; notably the Land Bank (AGRIBANK) and the People's Own Savings Bank (POSB). To ensure sustainability, funding for the specialized financial institutions should progressively move away

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<sup>11</sup>For example, by mid 2017 transactions through mobile money services constituted 67% of the total volume and about 13% of the total value of Zimbabwe's national payment systems (RBZ 2017)

from government shareholding to ownership by individual shareholders whose business interests coincide with those of the institutions.

The recommendation suggests that farmers should be given priority options to hold shares in AGRIBANK while micro investors and savers should be given options to invest in the POSB. Even though the individual resources that can be raised by such investors may be small, collectively they can make significant, sustainable and more diversified investible resources when lumped together. Kenya's Equity Bank, which employs this form of ownership, has been argued to be one of the leading performing bank on the Nairobi Securities Exchange market (Allen et al. 2014), suggesting that the option is not only doable but more effective.

The strategy has a number of advantages worth Zimbabwe's consideration. First, it provides for a more diversified and sustainable source of funding for the specialized banks as opposed to funding which is concentrated in the hands of a single investor, government. Second, it gives the relatively financially marginalized individuals an opportunity to invest and accumulate wealth. It creates a sense of ownership among the traditionally marginalized and prompts them to invest more in the institutions. Last, the ownership model allows the institutions' customers as a group to have some controlling ownership stake into the institutions; hence giving them the opportunity to influence the institutions' general strategies and products to suit their requirements and nature of business.

## 9 Conclusion

This study sets out to establish the level of Zimbabwe's financial inclusion, its determinants and how financial inclusion or exclusion is related to some selected indicators of livelihood; namely access to basic income, food, health and education services. Using data from a consumer survey done by FinScope in 2014, we estimate an overall financial inclusion rate of 58% for adult Zimbabweans. Narrowing down to inclusion through banking services only, we estimate banking inclusion of about 33% for adult Zimbabweans. A number of factors have been identified as the major determinants of financial inclusion, major among them being income, distance to the nearest financial institution and whether one lives in urban or rural areas, education, financial literacy and financial capability as well as age and gender.

The study has strong evidence suggesting that there is a positive link between financial inclusion and access rates to the selected indicators of livelihood, with the financially included having greater access to income, food, health and education services while the excluded are more vulnerable accessing the same. There is greater access vulnerability with regard to income and food for the financially excluded. The results also suggest

that the differential effect of financial inclusion on access becomes wider when banking inclusion instead of overall inclusion is considered, suggesting that banking inclusion is more critical as a tool to fight poverty as opposed to an all inclusive financial inclusion strategy.

The country's low levels of financial inclusion, especially access to and use of banking services and the importance of financial inclusion in influencing access to the basic drivers of livelihood and wellbeing for the country suggest the importance of effective strategies and policies to enhance inclusion. The policy indications for enhancing financial inclusion that have arisen from the study include promotion of use of financial services through improving schooling and reforming the education system, improving financial literacy and capabilities and supply leading strategies to create jobs and incomes. We have also suggested the need for expanding the spatial presence of banks through infrastructure sharing in the unbanked areas.

The study provides critical insights. Utilizing individual and household level data as opposed to using macro time series data allowed us to link financial inclusion aspects at the individual level and individual level welfare indicators. We, however, acknowledge the weakness of using 2014 data and in its cross sectional form, both of which have been dictated by data availability. With availability of newer data set, we recommend further studies on the topic covered.

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# Annexure A

## Index of Financial

The computed financial inclusion indicator closely follow the methods employed by Sarma et al. (2008) and by the UN in computing the Human Development Index. Five variables relating to financial services access and utilization with statistics available from 2004 to 2015 have been utilized. These are: the number of automated teller machines (ATMs) per 100 000 adults, the number of commercial bank branches per 100 000 adults, the number of borrowers from commercial banks per 1 000 adults, the number of depositors with commercial banks per 1 000 adults and domestic credit to private sector as percent of gross domestic product.

In the first step, we computed the dimension index for each of the five over the period 2004 to 2015, with each year's index for dimension  $i$  for each of the countries defined as:

$$d_{it} = \frac{a_{it} - \min_i}{\max_i - \min_i} \quad (4)$$

with  $a_{it}$  defining the value taken by the dimension in year  $t$ ; while  $\min_i$  and  $\max_i$  are the minimum and maximum values taken by the dimension over the entire period. The computed index, therefore, gives the within country variation in each dimension over time<sup>12</sup>. The overall index of financial inclusion is computed as the average value of all the dimension indices in each year. To circumvent the problem of selecting weights, we compute the overall index as the normalized inverse of Euclidean of each  $d_{it}$  computed in 4 from 1 as the ideal point, the overall index in each period is:

$$IFI_t = 1 - \frac{\sqrt{(1 - d_{1t})^2 + (1 - d_{2t})^2 + \dots + (1 - d_{5t})^2}}{\sqrt{5}} \quad (5)$$

From equations 4 and 5, an improvement in financial inclusion is represented by higher values for  $a_{it}$  and  $d_{it}$  which both lead to higher values for the financial inclusion index ( $IFI_t$ ).

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<sup>12</sup>Note that the dimension indices can also be computed incorporating both cross-sectional and time variations by tying the computation to fixed maximum and minimum values for each dimension across all countries over the entire time period. We, however, chose to compute the within and cross country dimension indices separately for simplicity. When computing the cross country dimensional indices, subscript  $t$  for time variation in equation 5 is replaced by  $j$ , representing the  $j^{th}$  country and the maximum and minimum values for each dimension are identified across countries in each year.

# Annexure B

## Summary Statistics

Table 4: Summary Statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
Household Income Security	4,000	3.1	1.5	1.0	5.0
Food Access Security	4,000	3.6	1.4	1.0	5.0
Health Access Security	3,999	3.9	1.2	1.0	5.0
Education Access Security	4,000	3.9	1.3	1.0	5.0
Financial Inclusion	4,000	0.6	0.5	0.0	1.0
Urban	4,000	0.3	0.5	0.0	1.0
Age	4,000	40.1	16.0	18.0	85.0
Financial Literacy	4,000	0.4	0.6	0.0	2.0
Financial Planning	3,986	0.4	0.5	0.0	1.0
Bank Inclusion	4,000	0.2	0.4	0.0	1.0
Education	4,000	2.7	1.0	0.0	6.0
Marital Status	4,000	0.7	0.5	0.0	1.0
Household Income	3,691	264	1,621	0.0	80,522
Distance to Inst	3,975	2.3	1.4	1.0	5.0
Gender	4,000	0.4	0.5	0.0	1.0

Table 5: Correlation Matrix

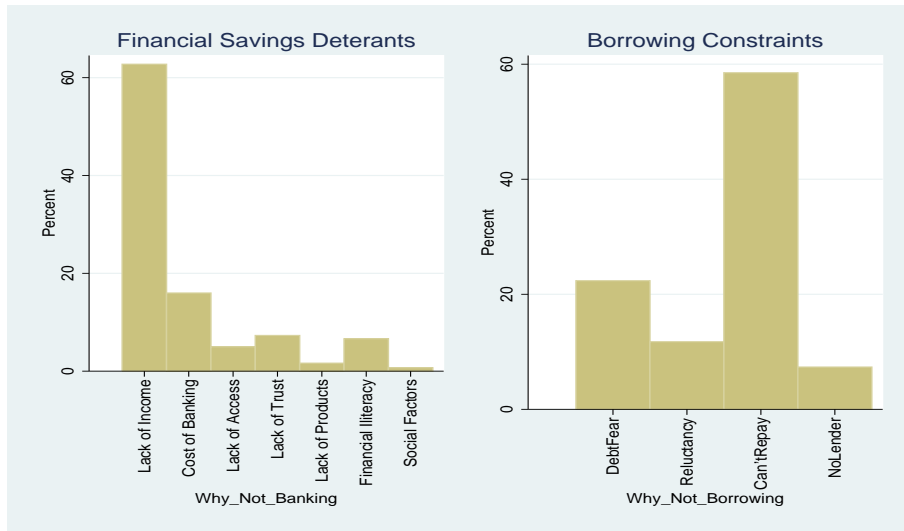
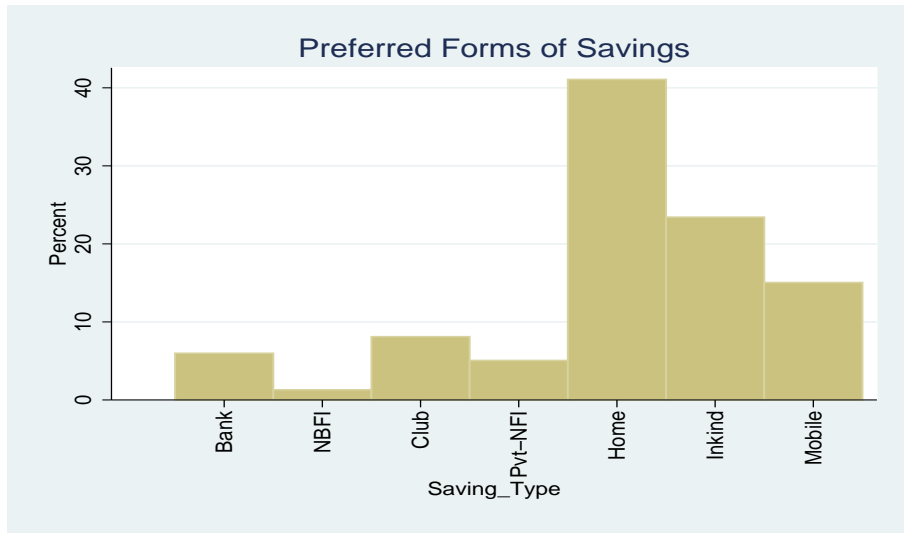
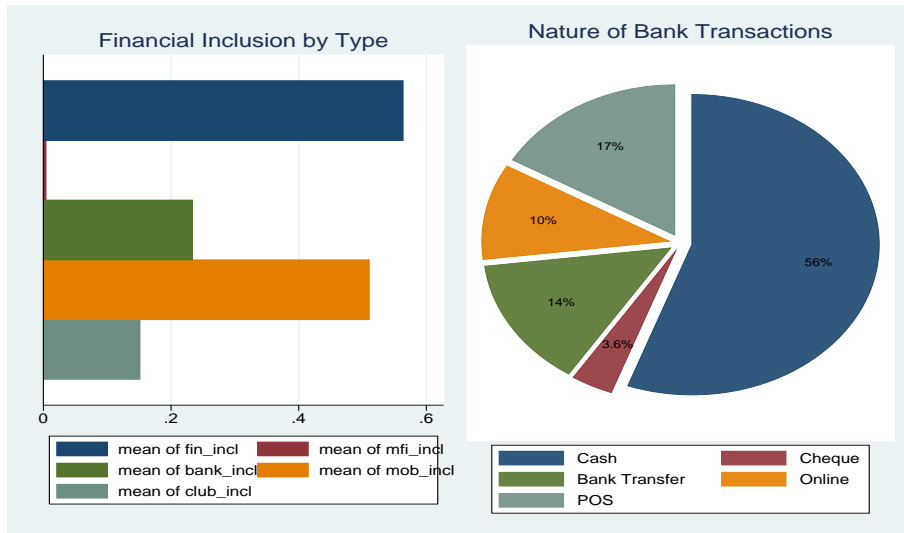
Var	Inc Sec	Food Sec	Health Sec	Educ Sec	fin incl	urban	Age
Inc Sec	1.0						
Food Sec	0.6	1.0					
Health Sec	0.5	0.5	1.0				
Educ Sec	0.5	0.4	0.5	1.0			
Fin Incl	0.2	0.2	0.2	0.1	1.0		
urban	0.2	0.1	0.2	0.2	0.3	1.0	
Age	-0.2	-0.2	-0.2	-0.2	-0.1	-0.2	1.0
Fin Lit	0.2	0.2	0.2	0.2	0.3	0.3	-0.1
Fin Plan	0.2	0.2	0.2	0.2	0.2	0.1	-0.1
Bank Incl	0.2	0.2	0.2	0.1	0.4	0.2	0.1
Educ	0.2	0.3	0.2	0.2	0.3	0.3	-0.3
Mar Stat	0.0	0.0	-0.0	-0.1	0.0	-0.1	0.0
House Inc	0.1	0.0	0.0	0.0	0.1	0.0	-0.0
Dist to Inst	-0.2	-0.1	-0.1	-0.1	-0.3	-0.5	0.1
Gender	0.0	0.0	0.1	0.0	0.0	-0.1	0.1

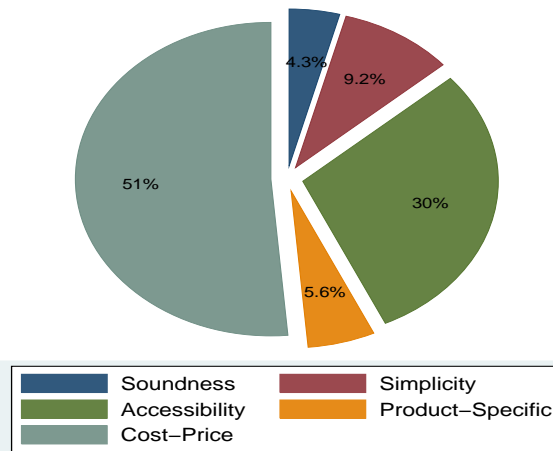
Var	Fin Lit	Fin Plan	Bank Incl	Educ	Mar Stat	House Inc	Dist to Inst
Fin Lit	1.0						
Fin Plan	0.2	1.0					
Bank Incl	0.3	0.2	1.0				
Educ	0.4	0.2	0.3	1.0			
Mar Stat	-0.0	0.1	0.0	0.0	1.0		
House Inc	0.1	0.1	0.1	0.1	0.0	1.0	
Dist to Inst	-0.3	-0.1	-0.2	-0.2	0.1	-0.1	1.0
Gender	0.2	-0.0	0.1	0.1	0.1	0.0	0.0



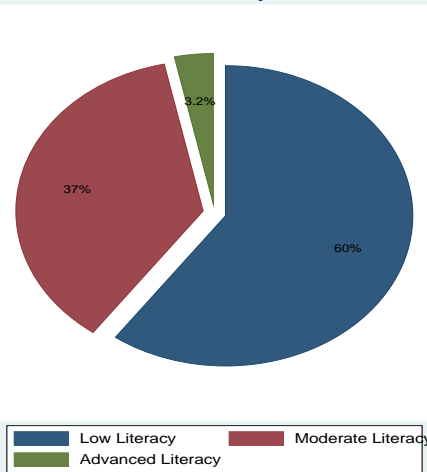
# Graphics



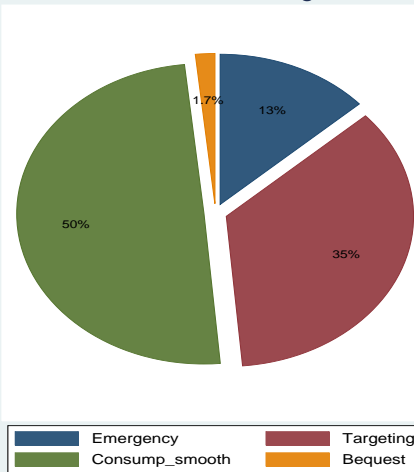
### Considerations for Bank Selection



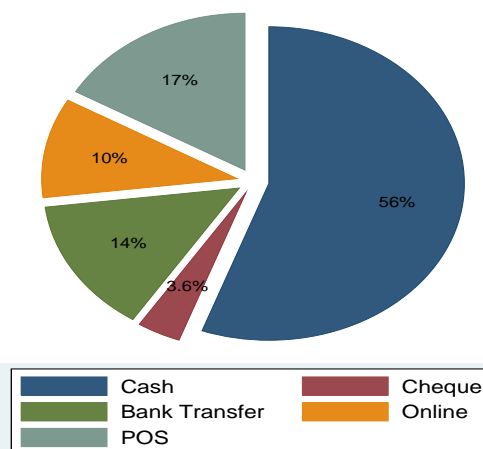
### Financial Literacy Levels



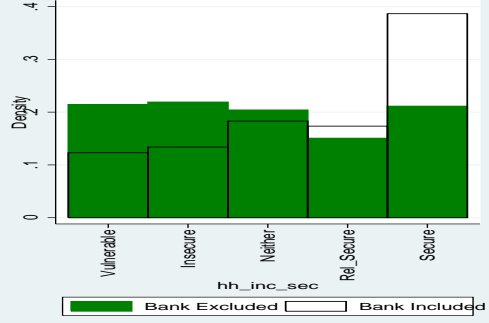
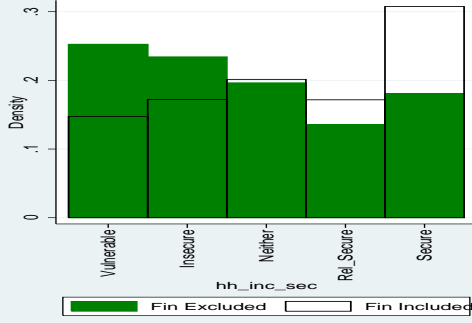
### Motives for Saving



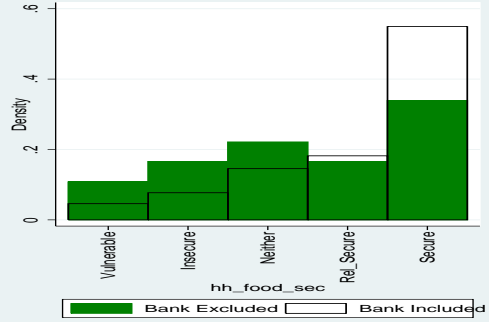
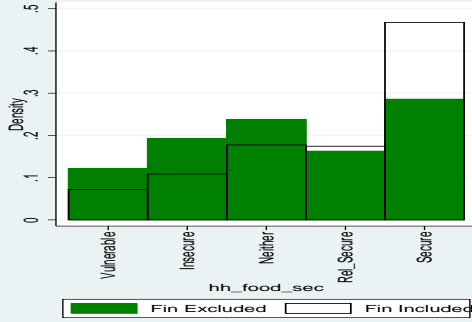
### Nature of Bank Transactions



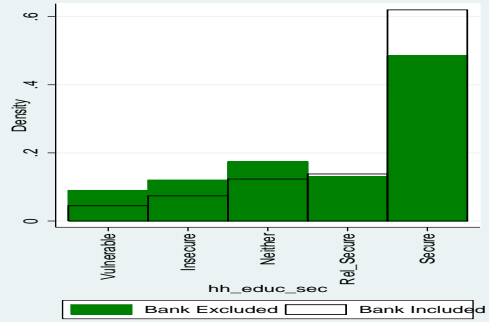
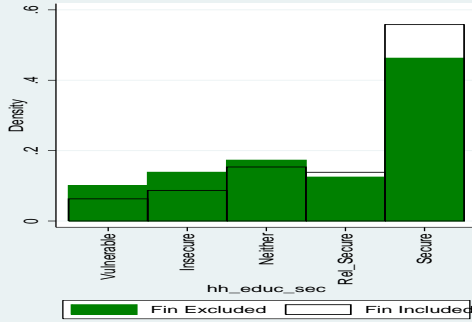
### Financial Inclusion And Access To Basic Income



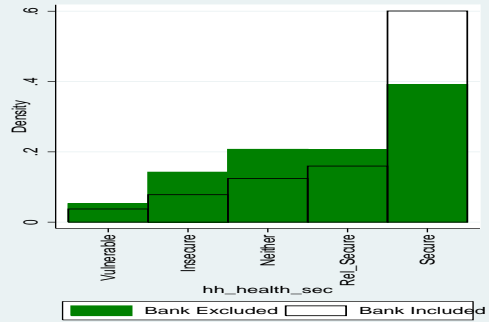
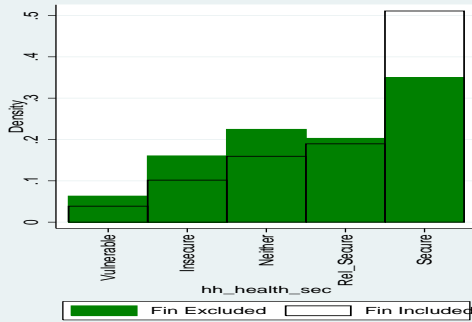
### Financial Inclusion And Access To Food



### Financial Inclusion And Access To Education



### Financial Inclusion And Access To Health Services



## Results Tables

Table 6: Determinants of Banking Inclusion

	(1)	(2)	(3)	(4)
	Bank Incl	Bank Incl	Bank Incl	Bank Incl
Log Income	1.045*** (0.061)	0.986*** (0.065)	0.676*** (0.064)	0.761*** (0.073)
Urban		0.357*** (0.104)		0.362** (0.124)
Distance to Financial Institution			-0.100* (0.045)	-0.110* (0.052)
Education			0.393*** (0.054)	0.555*** (0.060)
Moderate Financial Literacy			0.798*** (0.113)	0.714*** (0.122)
Advanced Financial Literacy			1.328*** (0.224)	1.082*** (0.248)
Financial Planning Capability			0.371*** (0.103)	0.497*** (0.110)
Age				0.051*** (0.004)
Married				-0.146 (0.118)
Male				0.432*** (0.110)
Constant	-6.860*** (0.333)	-6.722*** (0.340)	-6.578*** (0.368)	-9.845*** (0.499)
<i>N</i>	3606	3606	3570	3570
<i>PseudoR</i> <sup>2</sup>	0.187	0.193	0.245	0.31
<i>Waldchi</i> <sup>2</sup> (.)	296	340	506	539

Robust Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 7: Financial Inclusion and Livelihood Indicators

	Overall Incl Income Access	Overall Incl Food Access	Overall Incl Health Access	Overall Incl Education Access
Financial Inclusion	0.252*** (0.061)	0.371*** (0.062)	0.227*** (0.062)	-0.024 (0.066)
Household Wealth	0.296*** (0.018)	0.310*** (0.020)	0.296*** (0.021)	0.313*** (0.022)
Urban	-0.184* (0.080)	-0.466*** (0.084)	-0.320*** (0.086)	-0.166 (0.087)
Age	-0.012*** (0.002)	-0.014*** (0.002)	-0.017*** (0.002)	-0.008*** (0.002)
Household Size	-0.050*** (0.014)	-0.037* (0.015)	-0.058*** (0.015)	-0.249*** (0.016)
cut1	-2.258*** (0.121)	-3.236*** (0.135)	-4.201*** (0.143)	-4.329*** (0.147)
cut2	-1.184*** (0.117)	-2.069*** (0.126)	-2.729*** (0.128)	-3.265*** (0.137)
cut3	-0.284* (0.116)	-1.053*** (0.123)	-1.669*** (0.124)	-2.314*** (0.132)
cut4	0.516*** (0.117)	-0.283* (0.122)	-0.786*** (0.122)	-1.674*** (0.129)
<i>N</i>	4000	4000	3999	4000
<i>PseudoR</i> <sup>2</sup>	0.149	0.146	0.147	0.167

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 8: Bank Inclusion and Livelihood Indicators

	Overall Incl Income Access	Overall Incl Food Access	Overall Incl Health Access	Overall Incl Education Access
Bank Inclusion	0.312*** (0.086)	0.462*** (0.085)	0.363*** (0.091)	0.125 (0.091)
Household Wealth	0.291*** (0.019)	0.307*** (0.020)	0.290*** (0.021)	0.303*** (0.022)
Urban	-0.164* (0.080)	-0.444*** (0.084)	-0.304*** (0.086)	-0.166 (0.087)
Age	-0.012*** (0.002)	-0.015*** (0.002)	-0.018*** (0.002)	-0.008*** (0.002)
Househod Size	-0.049*** (0.014)	-0.037* (0.015)	-0.058*** (0.015)	-0.249*** (0.016)
cut1	-2.369*** (0.116)	-3.404*** (0.130)	-4.295*** (0.139)	-4.299*** (0.141)
cut2	-1.297*** (0.111)	-2.240*** (0.120)	-2.824*** (0.123)	-3.234*** (0.131)
cut3	-0.399*** (0.110)	-1.226*** (0.117)	-1.765*** (0.118)	-2.282*** (0.126)
cut4	0.402*** (0.111)	-0.459*** (0.116)	-0.881*** (0.116)	-1.643*** (0.123)
<i>N</i>	4000	4000	3999	4000
<i>PseudoR</i> <sup>2</sup>	0.156	0.146	0.147	0.167

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$