



DETERMINANTS OF FINANCIAL INCLUSION IN ETHIOPIA

¹K.Sambasiva Rao, ²Andualem Ufo Baza

¹Professor of Finance & Accounting, Department of Commerce & Mgt studies, Andhra University, Visakhapatnam, India.

²Research Scholar, Department of Commerce & Mgt Studies, Andhra University, Visakhapatnam, India.

ABSTRACT

We examined the link between financial inclusion and individual characteristics. Our regression analysis shows that financial inclusion is determined by individual characteristics such as income; household size; unemployment and out of work force. The result of regression shows income fourth 20% is statistically significant and has positive influence on the financial inclusion. Whereas, income poorest 20%; income second poorest 20%; household size; unemployed; and out of work force has significant, but negative influence on financial inclusion. We verified that income is a major factor for financially included since the financial inclusion tends to occur among high economic status individuals. Our finding shows that the households have more likelihood of financially included in high income groups.

Key words: Determinants of Financial Inclusion, income, unemployment, Ethiopia

1. Introduction

The existing studies mention that the determinant of financial inclusion can be those of individual and macro-economic. They particularly mention income, unemployment and illiteracy of individuals. Financial inclusion can be determined with respect to level of income, education, employment, geography, age, gender, marital status and household size [(World Bank, 2014); (Allen and others, 2012); Dimeriguc-kunt and Klapper, 2012)]. The empirical evidence shows that these factors determine an individual financial inclusion. Until today, we know little about the determinants of financial inclusion in Ethiopia. It needs a research and analysis in order to

identify which specific determinant that affects the access to financial services in jurisdiction. The identifying determinants can benefit the policy makers in financial inclusion policy decision making. Examining how individual's access to financial services in today's financial system can be determined and significance of those determinants to financial inclusion in jurisdiction is the focal point for the study. The main objective of this study is twofold. The first goal is to identify the determinants of financial inclusion in Ethiopia. The second goal is to analyze and document the significance of determinants of financial inclusion in Ethiopia for policy decision making. The remaining part of this paper is organised as follows. Section 2 reviews literature. Section 3 discusses the methodology. Section 4 discusses the results. Section 5 concludes and recommends.

2. Literature Review

For the analysis of 148 countries covering 5.6 billion people (Faz and Ted Moser, 2013) suggests that population density and per capita income influence financial inclusion. They mentioned income and population density are the powerful determinants of financial inclusion at country level. The empirical evidences show that the individual traits such as income, gender, age, geography, literacy, employment status and size matters for financial inclusion [(Demirguc-Kunt and Klapper, 2012); (Allen and others, 2012), (Demirguc-Kunt et al., 2015)]. Aportela (1999) mentioned household income is the powerful determinant of financial inclusion. The low-income individuals were constrained from financial services usually credit are unavailable for them and savings accounts are not adequate for their income level. The empirical evidence on factors affecting access to financial services indicates that gender issue, age factor, legal identity, limited literacy, place of living, psychological and cultural barriers, social security payments, bank charges, terms and conditions, level of income, type of occupation and attractiveness of products [(World Bank, 2008); (Reserve Bank of India, 2008)].

3. Methodology

Below, we explain the methodology and data that we collect and use in our analysis.

3.1 Econometric Model on Determinants of Financial inclusion

We employed regression analysis to examine the robust determinants of financial inclusion in Ethiopia, relying on some of variables of financial inclusion and individual characteristics from the demand side survey response of 2015/16 conducted by the researchers in Ethiopia. We stressed from the outset that we are not only estimated causal relationships, but also examined which specific variable was the most significant for financial inclusion in Ethiopia. For ease of

exposition, however, we refer all explanatory variables as determinants of financial inclusion throughout the study.

The regression model for the expanded set of explanatory variables is:

$$y_i = \gamma + \beta_1 * Female_i + \beta_2 * income\ poorest\ 20percent_i + \beta_3 * income\ second\ 20percent_i + \beta_4 * income\ middle\ 20percent_i + \beta_5 * income\ fourth\ 20percent_i + \beta_6 * Age_i + \beta_7 * Age\ squared_i + \beta_8 * Rural_i + \beta_9 * illiterate_i + \beta_{10} * \log\ of\ household\ size_i + \beta_{11} * Married + \beta_{12} * divorced + \beta_{13} * employed + \beta_{14} * unemployed + \beta_{15} * out\ of\ workforce + \varepsilon_i \dots \dots \dots (1)$$

Where the dependent variable (y_i) represents the measure of financial inclusion. We briefly explain all our variables below. We took the most important indicators of financial inclusion and explanatory variables from demand side survey response of 2016, these are in line with the literature on financial inclusion and individual characteristics. The goal is to analyze a general picture of the factors that are robustly linked to financial inclusion. However, we presented below only the regression in which financial inclusion indicator and explanatory variables were contemporaneous.

3.1.1 Explanatory Variables and Hypothesis

Below we briefly explain the underlying explanatory variables:

Female: A larger percent of females appears to be financially excluded due to low property ownership right, low income generation, and socio-cultural obstacles in economies. *Therefore, there is a negative and significant relationship between financial inclusion and being a female.*

Income poorest 20percent: in this study poorest 20percent are those adults who reported very poor, problem to get basic needs such as food and cloth. It is very difficult for extremely income poorest individuals to have an account at formal financial institution.

Therefore, there is a negative and significant relationship between financial inclusion and income poorest 20percent.

Income poorest second 20percent: in this study income second 20percent are those adults who reported poor, but no extreme problem to get basic needs such as food. It is somewhat difficult for income poorest individuals to have an account at formal financial institution.

Therefore, there is a negative and significant relationship between financial inclusion and income poorest second 20percent.

Income poorest middle 20percent: in this study income middle 20percent are those adults who reported low income, but no problem to get basic needs such as food and cloth. It is somewhat difficult for low income individuals to have an account at formal financial institution.

Therefore, there is a negative relationship between financial inclusion and income poorest middle 20percent.

Income fourth 20percent: in this study income fourth 20percent are those adults who reported middle income. It is less difficult for middle income individuals to have an account at formal financial institution.

Therefore, there is a positive relationship between financial inclusion and income fourth 20percent.

Age: mean those adults who reported age between 15 and 34 years. An adult of age of older than 15 year may have a positive effect on financial inclusion. Age above 15 year of old may have likelihood of having an account in formal financial institution because of resolved legal barriers related to age and they can generate their own income.

Therefore, there is a positive relationship between financial inclusion and age above 15 years.

Age Squared: mean those adults who reported age above 35 years. An increase of age may have a positive effect on financial inclusion. Age appears to determine employment and income generation. Age above 35 may have increasingly likelihood of having an account because there appears to be increased chance of employment and income generation. Therefore, there is a positive and significant relationship between financial inclusion and *age above 35 years*.

Rural: mean those adults who reported living in rural areas in jurisdiction. Living in rural area is negatively linked to financial inclusion, because the availability of financial services in rural Ethiopia is less. Therefore, there is a negative and significant relationship between financial inclusion and *living in rural area*.

Illiterate: mean those adults who reported illiterate. Being out of education is expected to be negatively linked to financial inclusion, because of low attitude toward formal financial services. Beside this, having formal financial institution account is linked to education and level of awareness. Therefore, there is a negative and significant relationship between financial inclusion and *being illiterate*.

Log household size: household size is expected to be negatively linked to financial inclusion, because individuals with large household size to be expected not to have formal financial accounts and use some other accounts in household. Therefore, there is a negative relationship between financial inclusion and *being large in household size*.

Married: mean those adults who reported married. Being married is expected to be positively linked to financial inclusion, because an individual married appears to have better economic

status and income stability than those who divorce/separate. Therefore, there is a positive relationship between financial inclusion and *being married*.

Divorced/Separated: mean those adults who reported divorced or separated. Being divorced or separated is expected to be negatively linked to financial inclusion, because an individual who divorced/separated appears to be decline in the economic status and low income than before. Therefore, there is a negative relationship between financial inclusion and *being divorced/separated*.

Employed: mean those adults who reported employed as a worker in either government or private sector. Therefore, there is a positive relationship between financial inclusion and *being employed*.

Unemployed: mean those adults who reported unemployed. Therefore, there is a negative and significant relationship between financial inclusion and *being unemployed*.

Out of work force: mean those adults who reported out of workforce. Therefore, there is a negative and significant relationship between financial inclusion and *being out of work force*.

4. Econometric Analysis and Results of Regression

We analyzed the link between financial inclusion and individual characteristics. We examined the link between those who are banked and individual characteristics like income, gender, geography, household size, marital status, education and occupation. The result of regression shows that incomes fourth 20% is statistically significant and have positive influence on the financial inclusion. Whereas income poorest 20%; income second poorest 20%; household size; unemployed and out of work force has significant but negative influence on financial inclusion. Further, the financial inclusion variables, employed and married are very small but positive influence on financial inclusion. Our regression result shows that the illiterate and rural have negative influence on the financial inclusion. The coefficient of determination R-square (R²) indicates that 63.90% behaviour of financial inclusion variables account penetration can be explained by the independent variables indicated. Overall, F-statistic 38.266 with p-value 0.00 indicates that the regression model is feasible.

5. Conclusion and Recommendation

This paper focused on two main goals. The first goal is to examine the determinants of financial inclusion in Ethiopia. The second goal is to analyze and document the significance of determinants of financial in Ethiopia for financial inclusion policy decision making.

Notwithstanding, Ethiopia has gained some improvement in financial sector, majority of individuals and firms are excluded from financial services. We examined the link between

financial inclusion and individual's characteristics. The results of regression show that income, age, household size, unemployment and out of work force are the main determinants of financial inclusion in Ethiopia. our regression result indicate income fourth 20% is statistically significant and has positive influence on financial inclusion, whereas income poorest 20%, income second poorest 20%, household size, unemployed and out of work force have significant but negative influence on financial inclusion. The financial inclusion variables such as employed and married individuals are very small but positive influence on financial inclusion. We verified that the variables such as illiterate and rural residence have negative influence on financial inclusion. In general, the regression result shows that poorest and those out of work forces have lowest probability of financial inclusion. It is possible to lower the gap in access and use of financial services through creating inclusive financial system that can better enhance the poor to access credit, saving, microinsurance and payment services.

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Appendix A.1

Table 1. Regression of financial inclusion (account) and individual household traits

Coefficients ^a						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
(Constant)	.847	.380		2.231	.026	
Female	-.049	.037	-.048	-1.322	.187	
Income poorest 20%(A)	-.512	.098	-.507	-5.207	.000	
Income second 20%(B)	-.460	.103	-.398	-4.474	.000	
Income middle 20%(C)	-.085	.100	-.080	-.852	.395	
Income fourth 20%(D)	.307	.099	.251	3.084	.002	
Age	-.001	.020	-.008	-.028	.978	
Age squared	5.865E-005	.000	.065	.226	.822	
Rural	-.036	.046	-.037	-.788	.431	
Illiterate	-.051	.039	-.050	-1.324	.187	
Log of household size	-.119	.043	-.102	-2.783	.006	
Married	.008	.046	.008	.177	.860	
Divorced/ separated	.031	.068	.021	.462	.644	
Employed	.044	.050	.037	.878	.380	
Unemployed	-.182	.053	-.192	-3.401	.001	
Out of Work force	-.383	.081	-.177	-4.703	.000	

a. Dependent Variable: Account Penetration

Source: Regression of Account penetration and individual household characteristics

Table 2. Model Fitness

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.799 ^a	.639	.622	.290

a. Predictors: (Constant), Out of Work force, Divorced/ separated, Income second 20%(B), Illiterate, Female, Log of household size, Employed , Income fourth 20%(D), Age, Income middle 20%(C), Rural, Married, Unemployed, Income poorest 20%(A), Age squared

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	48.436	15	3.229	38.266	.000 ^b
	Residual	27.341	324	.084		
	Total	75.776	339			

a. Dependent Variable: Account Penetration

b. Predictors: (Constant), Out of Work force, Divorced/ separated, Income second 20%(B), Illiterate, Female, Log of household size, Employed , Income fourth 20%(D), Age, Income middle 20%(C), Rural, Married, Unemployed, Income poorest 20%(A), Age squared

Source: Regression of Account penetration and individual household characteristics