Bangladesh J. Sci. Res. **30**(1&2): 81-89, 2017 (December)

IDENTIFYING FACTORS THAT INFLUENCE ACCESS TO BANKING SERVICES IN BANGLADESH: A HOUSEHOLD LEVEL ANALYSIS

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Abstract

This study, employing a logistic regression model seeks to identify the important factors that influence household's access to banking services. The result shows that about 31.7% households have bank account while the remaining 68.3% households have no such account. The result found that with the increase in age of household's head access to banking services increased gradually. As observed, female headed household have greater access to banking services as compared to male headed household. More so, formerly/ever married headed households have less access to banking services by comparison with never married headed households. The result also shows that access to banking services gradually increased with increasing education level of household's head. It is found that poor households have very less access to banking services as compared to non-poor households. Increased land ownership of household allowed gradual increase in the access to banking services. The result also mentions that non-owner homestead households have less access to banking services as compared to own homestead households. According to the logistics regression analysis, comparing with the rural households it has been found that the urban households have more access to banking facilities.

Key words: Bank account, Household, Logistic regression analysis

Introduction

Bank is a financial institution that deals in money and it plays a very important role for the economic development of a country. The access to finance in developing countries has been considered as a necessity just like safe water or primary education (Beck and de la Torre 2006, Leeladhar 2005). In developing countries only 20% population has access to formal financial services (World Savings Banks Institute 2004). On the contrary, in developed countries, financial services covers almost majority of the population (Peachy and Roe 2004).

The most important part of financial services in a region is typically measured by a number of people who have access to bank accounts (Beck and de la Torre 2006, Littlefield *et al.* 2006). It stands to reason that bank accounts enable people to perform important financial functions like access to savings schemes, access to credit, taking loan, insurance, money transfer etc. Thus, bank accounts invariably determine access to many other financial services (Mohan 2006).

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Access to banking services is viewed as a key determinant of economic well-being for households, especially in low-income countries. Savings and credit products make it easier for households to align income and expenditure patterns across time, to insure themselves against income and expenditure shocks, as well as to undertake investments in human or physical capital. A study conducted by Beck and Brown (2011) shows a large variation in the use of banking services. Specifically, more than 90% of households in Estonia and Slovenia have a bank account, while less than 10% do so in Armenia, Azerbaijan, Georgia, Kyrgyzstan, Tajikistan and Uzbekistan. The use of banking services is more common among households in urban areas, households with higher income and wealth as well as for households in which an adult member has professional education and formal employment.

The poor people are less likely to avail banking facilities. Over 35% of low income households in the United States do not have a bank account, as against a national average of 10% (Washington 2004). These figures are typically much higher in low income countries relative to a national mean of 50%. Seventy three per cent of low income South African households are without bank accounts. Within low income countries, the group most likely to be excluded from the banking sector is the rural poor (Paulson and McAndrews 1999).

At the national level, access to bank credit was positively and significantly influenced by age, being male, household size, education level, household per capita expenditure and race (Kavanamur 1994, Okurut 2006, Diagne *et al.* 2000, Diagne and Zeller 2001). The ability to borrow will also alleviate the need for accumulation of assets that mainly serve as precautionary savings, yielding poor or negative returns (Deaton 1991).

Beck and Brown (2011) examine survey data for 29,000 households from 29 transition economies to explore how the use of banking services is related to household characteristics and the structure of the banking sector. The analysis shows that in most countries the use of banking services increases with income, wealth and education. Urban households and households with stronger social integration are also more likely to have a bank account. A cross country comparison indicates that banking sector structure strongly affects the composition of the banked population. In countries with stronger foreign bank presence, higher deposit insurance, better payment systems and stronger creditor protection, wealthy, well-educated households and those with formal employment are more likely to use banks (Beck and Brown 2011)..

Individual and household characteristics such as age, gender, household size, education level, race and the household's wealth status (expenditure per capita) have been found to significantly affect a household's access to formal credit (Mohamed 2003, Okurut 2006). In addition, the composition of household assets is found to be much more important than the total value of household assets or landholding size as a determinant of household access to formal credit.

Higher shares of land and livestock in the total value of household assets are positively correlated with access to formal credit. It also shows that access to semi-formal credit in South Africa is positively and significantly affected by household size, per capita expenditure, provincial

location and being coloured, while the negative and significant factors include being male, rural location, being poor and white (Okurut 2006).

As shocking as it may seem to the developed world, 39% of the world's population, mostly comprised of the population in developing countries, does not have a bank account (World Bank 2015). It is estimated that 3 out of 4 adults in developing and middle income countries do not have bank accounts (Jake *et al.* 2009). Only about 10 per cent of the 2.5 billion people living on less than $2 per day have access to a bank account (Chaia *et al.* 2009). According to Global Findex data of the World Bank about 52 per cent of the urban and 37 per cent of the rural adults in developing countries have bank accounts. The percentage is 89 and 87, respectively for advanced countries (World Bank 2012).

The World Bank data 2014 manifests that in the high-income group countries 73% of the population (age 15+) has bank account; whereas in low to middle income countries about 53% of the population (age 15+) has bank account. In Bangladesh, 29% of the population (age 15+) has a bank account (World Bank 2014). In India, only 41% of adult population do not have access to banking services. The coverage of financial services in terms of bank accounts are 39% for rural areas, and 60% for urban areas (Bhandari 2009). According to a study conducted by Institute of Microfinance, 32.8% rural households have access to formal financial services in Bangladesh. It is 53.53% in urban areas (Khalily *et al.* 2011).

Access to basic banking services in Bangladesh remains limited, and lags far behind even other parts of the developing world. Such limited access could potentially have important repercussions on people's lives. If lacking a formal bank account makes it more difficult for people to save, they will be unlikely to have enough saved up to cope with unexpected emergencies such as household illness. Lack of banking access might also make it difficult for people to save up large sums or obtain credit for lumpy purchases such as start-up costs for a business, agricultural inputs, etc. According to above literature, a study is needed to identify influence of socio-economic factors in access to banking services. The present study attempts to investigate the current scenario of household access to banking services and identify the factors that influence access to banking services in Bangladesh.

Materials and Methods

The data used to analyze access to banking services is drawn from Demographic and Health Surveys (DHS) 2014 for Bangladesh. The survey is based on a two-stage stratified sample of households. In the first stage, 600 enumeration areas (EAs) were selected with probability proportional to the EA size, with 207 clusters in urban areas and 393 in rural areas. In the next step, a complete household listing operation was carried out in all the selected EAs to provide a sampling frame for the second-stage selection of households. In the second stage of sampling, a systematic sample of 30 households on average was selected per EA to provide statistically reliable estimates of key demographic and health variables for the country as a whole, for urban and rural areas separately, and for each of the seven divisions. Finally, 17,300 households were

surveyed and the data have been collected, summarized and presented in the Bangladesh DHS report. In this study, all 17,300 households are considered for the analysis of access to banking services in Bangladesh.

In this research, contingency table is constructed to verify whether there is any association between dependent and independent variables. Chi-square test of independence is applied to examine the effect of household characteristics in access to banking services. To identify the factors most strongly associated with it, the entre method of logistic regression model is performed.

The analysis uses logistic regression, which estimates model with a binary response and a set of explanatory variables. In logistic regression model, a dichotomous variable, access to banking services are introduced to determine whether the household has bank account or not.

Here,

$$\text{Access to Banking Services} = \begin{cases} 0, \text{ if the household has no bank account} \\ 1, \text{ if the household has bank account} \end{cases}$$

The logistic regression model is given by

$$logit\ (P) = \log\left(\frac{P_i}{1-P_i}\right) = \sum_{i=0}^{n} \beta_i X_i$$

Where,

$P_i = P\left(Y_i = \frac{1}{X_i}\right) = \frac{\exp(\sum_i \beta_i X_i)}{1+\exp(\sum_i \beta_i X_i)}$ = Probability that the ith household has bank account

Y_i = Access to banking services status of ith household;

Y_i = 1 if the household has bank account, and zero if the household has no bank account,

X_i= i^{th} predictor variable; and β_i = i^{th} parameter associated with X_i.

Results and Discussion

All the analyses are performed by SPSS (V21.0). Cross tabulation and Chi-square tests are performed first. Then those variables found to be significant in Chi-square test are used to construct logistic regression model. The result shows that about 31.7% households have bank account and the remaining 68.3% households have no bank account. Institute of Microfinance (InM) conducted a survey on “Access to Finance in Bangladesh” in 2011, which shows about 37% of the households have access to formal financial services and only 23.81% household have access to formal saving account (Khalily *et al.* 2011).

Bivariate analysis: The result of bivariate analysis shows that the households whose head belongs to age less than 35 years, age 35 - 44 years, age 45 - 59 years, and age 60 years and above, 72.3, 67.3, 66.3 and 67.4% have no bank account, respectively. According to World Bank, 79.2% of all young adults (aged 15 - 24) in Bangladesh have no bank account (World Bank 2015). Bangladesh’s overall access to accounts for adults (age 15 or over) of nearly 40% compares

favorably with South Asia's average of 33% and the low income country average of 27% (Bangladesh Bank 2012). The result also shows that 69.5% male headed and 60.1% female headed households have no bank account. According to InM, about 86.7% of female headed households have no savings accounts with any bank (Khalily *et al.* 2011). The result illustrates that the households whose head is never married, currently married and formerly/ever married, 71.3, 67.6 and 76.9% of those have no bank account. The result also mentions that the households whose head has no education, 86.2% of those have no bank account and 75.2, 57.7 and 26.0% households have no bank account with primary, secondary and higher educated head, respectively.

The result shows that 52.3% non-poor and 92.6% poor households have no bank account. According to Bangladesh Institute of Development Studies (BIDS), 97% non-poor households have account while 34% poor have bank account (Sen 2015). The analysis shows that 49.3% of the households who have access to information have no bank account and 83.3% households have no bank account with access to information. The result also illustrates that 72.7% households have no bank account of the households who have own livestock and the household who have not own livestock 60.5% of those have no bank account. The result indicates that 77.4, 64.6, 53.2 and 40.1% households have no bank account of those households who have no land, less than 1acre, 1 - 2 acres and above 2 acres land ownership, respectively. The result shows that the households who have no own homestead, 82.4% of those have no bank account. Again, 67.0% households have no bank account of those who have own homestead. The result shows that 64.5, 62.1, 64.1, 65.7, 72.4, 77.9 and 72.9% households have no bank account of those who lives in Barisal, Chittagong, Dhaka, Khulna, Rajshahi, Rangpur and Sylhet division, respectively. The result also shows that 56.3% urban and 74.5% rural households have no bank account. There are 160 million people in Bangladesh at the time, of which, 87% did not have a bank account and most are living in rural areas (Bangladesh Bank 2012). Findex data show that only 39 per cent of the rural and 46 per cent of the urban adults (age 15+) possess an account in a formal financial institution in Bangladesh (World Bank 2012).

At 5% level of significance, the result of Chi-square test shows that all 11 independent variables age, sex, marital status, education level of household's head, wealth index, access to information, own livestock, land ownership, own homestead, division and place of residence of household are highly significant with the access to banking services. Then the logistic regression model is constructed using these significant variables.

Logistic regression analysis: The final model that is fitted to the data is given by

$$logit\ (P) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11}$$

Where, X_1 = Age of household's head, X_2 = Sex of household's head, X_3 = Marital status of household's head, X_4= Education level of household's head, X_5 = wealth index, X_6 = access to information, X_7 = own livestock, X_8 = Land ownership, X_9 = Own homestead, X_{10} = Division of household, X_{11} = Place of residence.

Table 1. Result of logistic regression analysis with all selected independent variables.

Variables	β	SE	*P*-value	Odds ratio	95% C.I. for EXP(B)	
					Lower	Upper
Age of household's head						
Less than aged 35 (RC)			0.000	1.000		
Aged 35-44	0.280	0.057	0.000	1.323	1.182	1.480
Aged 45-59	0.388	0.057	0.000	1.474	1.319	1.648
Aged 60 and above	0.476	0.065	0.000	1.609	1.417	1.827
Sex of household's head						
Male (RC)				1.000		
Female	1.029	0.069	0.000	2.799	2.444	3.205
Marital status of household's head						
Never married (RC)			0.000	1.000		
Currently married	0.236	0.148	0.112	1.266	0.947	1.692
Formerly/ever married	–0.616	0.181	0.001	0.540	0.379	0.770
Education level of household's head						
No education (RC)			0.000	1.000		
Primary	0.433	.056	0.000	1.542	1.382	1.722
Secondary	0.856	0.056	0.000	2.353	2.108	2.626
Higher	1.974	0.071	0.000	7.199	6.258	8.282
Wealth index						
Non-poor (RC)				1.000		
Poor	–1.524	0.062	0.000	0.218	0.193	0.246
Access to information						
No (RC)				1.000		
Yes	0.517	0.047	0.000	1.676	1.529	1.838
Own livestock						
No (RC)				1.000		
Yes	0.053	0.048	0.269	1.055	0.960	1.160
Land ownership of household						
No land (RC)			0.000	1.000		
< 1 acre	0.399	0.048	0.000	1.491	1.357	1.637
1 - 2 acres	0.575	0.070	0.000	1.777	1.548	2.040
Above 2 acres	0.838	0.066	0.000	2.313	2.033	2.630
Own homestead						
No (RC)				1.000		
Yes	0.559	0.086	0.000	1.749	1.479	2.068
Division of household						
Barisal (RC)			0.000	1.000		
Chittagong	–0.225	0.075	0.003	0.798	0.689	0.924
Dhaka	–0.392	0.074	0.000	0.676	0.584	0.781
Khulna	–0.298	0.077	0.000	0.742	0.639	0.862
Rajshahi	–0.618	0.079	0.000	0.539	0.462	0.629
Rangpur	–0.795	0.083	0.000	0.452	0.384	0.531
Sylhet	–0.351	0.083	0.000	0.704	0.598	0.829
Place of residence						
Rural (RC)				1.000		
Urban	0.205	0.048	0.000	1.228	1.118	1.348

RC- Reference category.

For the study purpose, entre method of binary logistic regression analysis is employed. Using DHS 2014 data, the logistic has been estimated to determine the factors affecting access to banking services in Bangladesh. Table 1 presents the results of the fitted logistic regression model.

The result shows that except own livestock, all variables have highly significant ($p < 0.05$) effect on access to banking services.

The result of logistic analysis (Table 1) unravelled that with the increase in the age of household's head, access to banking services increases gradually. As observed from the odds ratio, households head with 35 - 44 years age, 45 - 59 years age and 60 years and above age are 1.323, 1.474 and 1.609 times more likely to have access to banking services, respectively as compared to the households head who belongs to age less than 35 years. The result also demonstrates that female headed households have more access to banking services (odds ratio: 2.799) by comparison with male headed households. This is a good sign for empowering women in Bangladesh. The logistic analysis indicates that the households' head who currently married are 1.266 times more and the households' head who formerly/ever married are 0.54 times less likely to have access to banking services as compared to the households' head who are never married.

The multivariate analysis indicates (Table 1) that access to banking services increased gradually with increasing education level of household's head. The odds ratio shows that the households head with primary, secondary and higher education are 1.542, 2.353 and 7.199 times more likely to have access to banking services, respectively as compared to the households head who has no education. The result also illustrates that poor households have very less access to banking services (odds ratio 0.218) as compared to non-poor households.

The result indicates that the households who have access to information are 1.676 times more likely to have access to banking services as compared to the households with no access to information. The logistic model shows that with the increase in land ownership of household access to banking services gradually increased. The odds ratio implies that the households having less than 1 acre, 1 - 2 acres and above 2 acres land ownership are 1.491, 1.777 and 2.313 times more likely to have access to banking services, respectively as compared to the households having no land ownership. Further, the analysis mentions that the households having own homestead are 1.749 times more likely to have access to banking services as compared with the households having no own homestead. The households who live in Chittagong, Dhaka, Khulna, Rajshahi, Rangpur and Sylhet are 0.798, 0.676, 0.742, 0.539, 0.452 and 0.704 times less likely to have access to banking services, respectively as compared to the households living in Barisal. This implies that the household has the lowest access to banking services in Rangpur and the highest access in Barisal. The result also shows that urban households have more access to banking services (odds ratio: 1.228) by comparison with rural households.

Conclusion

Household access to basic banking services, such as savings accounts, is the first step towards financial security of household. Household access to banking services is influenced by household

socio-economic characteristics. The present study investigates the factors that influence access to banking services in Bangladesh. The multivariate result implies that formerly/ever married headed household has less access to banking services as compared to currently married and never married headed household. So, government and respective financial institutions should develop effective mechanism and give flexibility to formerly/ever married headed households for ensuring access to banking services. The result illustrates that increase in educational level of household's head, the probability of access to banking services is gradually increased. This study focuses on the point that education plays a significant role in access to banking services. In this context, Bangladesh needs to prioritize education seriously since the experience in developing countries has proved its potential. People should be encouraged to send their children to schools or other educational institutions in ensuring education for all members. In this situation, policy and decision makers should review the policies for achieving this target. The government should consider allocating more financial resources to education sector. It is found that poor household has less access to banking service than non-poor household. In this point, government, respective financial institutions and policy makers should review the policies for ensuring poor people's access to banking services. The study shows that increasing access to information, the probability of access to banking services is increased. Government, respective financial institutions and policy makers should review the policies for increasing access to information. The study demands a flexible policy from the part of government and authority of financial institutions for increasing access to banking services for landless people, non-owner homestead household and rural people.

Acknowledgements

The authors express their gratitude and thanks to Prof. Dr. Soma Chowdhury Biswas, Department of Statistics, University of Chittagong for her valuable criticisms during the preparation of this paper.

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(Manuscript received on 17 May, 2017; revised on 16 October, 2017)