

## **AN ANALYSIS OF FINANCIAL INCLUSION**

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### **ABSTRACT**

*Based on a primary survey conducted in 2010 in the five villages of West Bengal, India under two gram panchayats located in the district of North 24 Parganas, the present study attempts to identify the variables that improve the possibility of financial inclusion. To judge the extent of financial inclusion we use a scoring methodology usually used in psychology. Then based on the scores the sample is divided into three mutually exclusive categories and multinomial logit regression is used to identify the factors leading to a higher score.*

### **Introduction**

Following Rangarajan Committee on Financial Inclusion (2008), "Financial inclusion may be defined as the process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and low income groups at an affordable cost."

According to this definition, there is an element of multi-dimensionality in the concept of financial inclusion. The present paper focuses on a particular aspect of the problem: namely, access of the poorer section to institutional financial services like banking and insurance.

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Rajan (2009) has pointed out that “financial inclusion is not only about credit, but involves providing a wide range of financial services, including saving accounts, insurance, and remittance products. An exclusive focus on credit can lead to undesirable consequences such as over indebtedness and inefficient allocation of scarce resources.” While there were concerted efforts to increase the access of the poor to institutional credit facilities<sup>1</sup>, the problem of lack of suitable savings and insurance mechanisms have not been properly addressed. Only in February 2011, Union Government launched ‘Swabhimaan’ – a nation-wide financial security programme to ensure banking facilities in habitations with a population in excess of 2000 by March 2012, to improve financial inclusion<sup>2</sup>. Under this scheme, steps were taken to extend financial outreach in West Bengal also<sup>3</sup>.

However, to extend the outreach of financial facilities to all sections of population, it is important to identify the factors that lead to financial exclusion, especially of the poorer section of population and this precisely is the aim of our paper. We want to investigate the extent of penetration of public and private institutional saving and insurance products into rural areas and which section of rural population are availing of these services. Simultaneously, we also want to investigate the reasons behind exclusion of certain sections if any such exist. This is an aspect that has not yet been investigated in any great detail.

Studies by Diniz et al (2011), Drexler et al, (2011) & Dvorak and Hanley (2010) point out the positive impact of financial literacy on financial inclusion. In the Indian context, Dev (2006), Chavan (2007), & Kamath, Mukherji & Sandstrom (2011), in their studies identified various segments of population who are financially excluded. In the context of West Bengal, Chattopadhyay (2011) developed an index of financial inclusion (IFI) using data on three dimensions of financial inclusion. The study shows that Kolkata district leads with the highest value of IFI followed by Darjeeling and concludes that both supply and demand side factors are responsible for financial exclusion. Bagli and Dutta (2011) using comprehensive measure of financial inclusion for each State on the basis of ten selected indicators, observed that the extent of financial inclusion in West Bengal is lower than that of the southern States. Majumder & Gupta (2013) in an extensive survey in Hoogly district of West Bengal, using bank account holding as an indicator of financial literacy, found that financially excluded households belong to socially backward classes (SC/ST) and low income classes with bare or no literacy. However, our treatment of financial inclusion is different and broader from the existing studies. We also hope to draw some policy conclusions from the analysis and throw some light on the issue that whether the present mode of operation of the financial institutions is adequate to ensure financial inclusion of the rural people, more specifically the rural poor.

### Description of the Survey

Our study is based on a primary survey conducted in 2010 in the five villages of West Bengal, India under two gram panchayats located in the district of North 24 Parganas: Nimdaria-Kodialia and Shakchura-Baghundi. The villages chosen from Nimdaria –Kodialia are Ghusuri, Gulaichandi and Nimdaria and those chosen from Shakchura-Baghundi are Shakchura and Baghundi. Initially, we collected income and expenditure data across 400 households. Then these households were divided into three income-classes based on annual incomes: ₹ 16,000-30,000, ₹ 30,000-50,000 and above ₹ 50,000. Then 200 samples were randomly selected taking roughly one-third from each income class. Final analysis was conducted based on the 200 samples.

In order to study the use of financial instruments of the rural households we have classified the instruments into two broad categories: saving instruments and insurance instruments. Further, we have classified savings instruments into four categories: savings account, fixed-deposits, recurring-deposits and mutual funds and insurance instruments into three categories: life insurance, health insurance and any other insurance (for instance, property insurance, crop insurance, vehicle insurance, etc.)

In majority of the cases, the household head, who was also the earning member, was the respondent. We have collected three categories of information: general socio-

economic profile of the respondent, different savings and insurance instruments used by him and the source of information that have led him to choose the particular instrument.

General socio-economic information about the respondent includes: age of the main earning member, again the head of the household in majority of the cases, religion, education level of the main earning member, occupation, number of earners in the households, annual income, annual expenditure, value of various forms of wealth which include land, residence, and cattle, etc., as separate categories.

The information collected about savings instruments are: number of savings accounts as well as fixed-deposits (FDs) and / or recurring-deposit accounts (RDs), the bank/ non-bank financial company (NBFC) with which the different accounts are maintained, time-frame for FDs and RDs, regularity of deposits in the savings account and in RDs, amounts of different deposits, rates of return on different deposits, any discontinuity in deposits and the reasons thereof, nomination, and finally the source of information based on which the deposits were made: whether the information came through some agents.

The information collected about insurance instruments were: name of the company from which the insurance was taken, how the information was obtained : direct/ through agent ; if the agent was known, time-frame (starting date, maturity period),

premium, amount insured, nomination, any discontinuity and its reason; for medical insurance: family members included.

Information collected on mutual funds were very similar: name of the company, how the information was obtained: direct/ through agent / if agent whether a known person, starting date, maturity period if any, amount of investment, return (interest/ capital gain), nomination, any discontinuity and its reason.

The sample has a larger Muslim representation (64.5 per cent) compared to Hindu (35.5 per cent). Overall 80 per cent of the population has an education level above class V. However, this proportion is not substantially different across religions (Hindus: 84.5 per cent, Muslims : 81.4 per cent).

In the study, we have divided the respondents into five occupational categories: farmers, wage earners, salary earner and pensioner, self-employed, and big-business men. The sample mainly consists of wage earners followed by farmers and big business. Among the Hindus, around 65 per cent of the sample are occupied as wage earners or big-businessmen, the share of farmers is relatively low. In contrast, 60.5 per cent of Muslims are occupied as farmers and wage earners. Moreover, the share of salaried and pensioners is relatively larger among the Hindus. Share of self-employment is comparatively low across all religious categories.

We have classified the respondents into four income categories according to family income: income less than or equal to ₹ 30,000 p.a. (first category) , income between ₹ 30,000 and ₹ 36,000 p.a (second category), income between ₹ 36,000 and ₹ 48,000 p.a. (third category) and income above ₹ 48,000 p.a. (fourth category). The sample mainly consists of wage earners followed by farmers and big business. Among the Hindus, around 65 per cent of the sample are occupied as wage earners or big-businessmen, the share of farmers is relatively low. In contrast, 60.5 per cent of Muslims are occupied as farmers and wage earners. Furthermore, the share of salaried and pensioners are relatively larger among the Hindus. Share of self-employment is relatively low across all religious categories. It is observed that 61 per cent of the wage earners constitute the lowest-income categories whereas big-businessmen (33 per cent) and salaried-pensioners (75 per cent) dominate the highest-income category.

#### **Extent of Financial Inclusion**

Table 1 shows the distribution of savings accounts across different income classes and different institutions.

**Table 1: Distribution of Savings Bank Account Across Different Income Categories**

Family Income Categories	Type of Savings Account	Type of Savings Account			Total	
		No SB Account	SB Account in Nationalised Bank	SB Account in Samabai Bank		SB Account in Post Office
Income less than or equal to ₹ 30000	Count	61	1	5	0	67
% within Family Income Categories		91.0%	1.5%	7.5%	.0%	100.0%
% within Type of Saving Account		47.7%	3.0%	14.3%	.0%	33.5%
Income Between ₹ 30000 and ₹ 36000	Count	28	0	9	3	40
% within Family Income Categories		70.0%	.0%	22.5%	7.5%	100.0%
% within Type of Saving Account		21.9%	.0%	25.7%	75.0%	20.0%
Income Between ₹ 36000 and ₹ 48000	Count	30	6	10	1	47
% within Family Income Categories		63.8%	12.8%	21.3%	2.1%	100.0%
% within Type of Saving Account		23.4%	18.2%	28.6%	25.0%	23.5%

(Contd...)

Table 1 (Contd...)

Family Income Categories	Count	Type of Savings Account			Total
		No SB Account	SB Account in Nationalised Bank	SB Account in Samabai Bank	
Income more than ₹ 48000	9	26	11	0	46
% within Family Income Categories	19.6%	56.5%	23.9%	.0%	100.0%
% within Type of Saving Account	7.0%	78.8%	31.4%	.0%	23.0%
Total	128	33	35	4	200
% within Family Income Categories	64.0%	16.5%	17.5%	2.0%	100.0%
% within Type of Saving Account	100.0%	100.0%	100.0%	100.0%	100.0%

We observe that 91 per cent of lowest-income category, 70 per cent of the second income-class and around 64 per cent of third-income class do not hold any savings bank account whereas this percentage is only 19 for the highest income-class. So people in highest income-class are more likely to be under the purview of banking network. Most of the account holders have accounts either in a

nationalised bank or in a Samabai Bank. Here also a definite pattern emerges. The share of nationalised banks is disproportionately larger in the highest income-category while the share of Samabai banks is more evenly distributed across different income categories.

Table 2 shows the distribution of recurring-deposits.

**Table 2: Distribution of Recurring-Deposit Accounts Across Income Classes**

Family Income Categories	Types of Recurring-Deposit	Types of Recurring-Deposit			Total
		No RD Account	RD Account in Nationalised Bank	RD Account in Private NBFC	
Income less than or equal to ₹ 30000	Count	54	0	13	67
	% within Family Income Categories	80.6%	.0%	19.4%	100.0%
Income Between ₹ 30000 and ₹ 36000	% within Types of Recurring-Deposit	36.2%	.0%	27.1%	33.5%
	Count	27	0	13	40
Income Between ₹ 36000 and ₹ 48000	% within Family Income Categories	67.5%	.0%	32.5%	100.0%
	% within Types of Recurring-Deposit	18.1%	.0%	27.1%	20.0%
Income Between ₹ 36000 and ₹ 48000	Count	25	1	20	47
	% within Family Income Categories	53.2%	2.1%	42.6%	100.0%
Income more than ₹ 48000	% within Types of Recurring-Deposit	16.8%	50.0%	41.7%	23.5%
	Count	43	1	2	46

(Contd...)



**Table 2 (Contd...)**

Family Income Categories	Types of Recurring-Deposit			Total
	No RD Account	RD Account in Nationalised Bank	RD Account in Private NBFC	
% within Family Income Categories	93.5%	2.2%	4.3%	100.0%
% within Types of Recurring-Deposit	28.9%	50.0%	4.2%	23.0%
Total	149	2	48	200
% within Family Income Categories	74.5%	1.0%	24.0%	100.0%
% within Types of Recurring-Deposit	100.0%	100.0%	100.0%	100.0%

Table 2 reveals an interesting pattern in holding of recurring-deposit. Firstly, around 25 per cent of the sample hold recurring-deposit accounts. Secondly, even the lowest-income class is holding some RD accounts (19 per cent of the total). In fact, it is the people in the lower-income classes that are mostly holding recurring-deposits. The two lowest-income

classes together hold around 54 per cent of total RD deposits whereas the third income-class alone holds around 42 per cent of entire recurring-deposits. Highest income-class has a negligible share of RD account in the sample. Majority of the RD accounts (94 per cent) are held with the private NBFCs.

**Table 3: Distribution of Fixed-deposits Across Income Classes**

Family Income Categories	No FD Account	FD Account in Nationalised Bank	FD Account in Private	FD Account in Post Office	Total
Income less than or equal to ₹ 30000	60	0	7	0	67
Count					
% within Family Income Categories	89.6%	.0%	10.4%	.0%	100.0%
% within Type of Fixed-Deposit Account	34.5%	.0%	30.4%	.0%	33.5%
Income Between ₹ 30000 and ₹ 36000	34	0	6	0	40
Count					
% within Family Income Categories	85.0%	.0%	15.0%	.0%	100.0%
% within Type of Fixed-Deposit Account	19.5%	.0%	26.1%	.0%	20.0%
Income Between ₹ 36000 and ₹ 48000	42	0	5	0	47
Count					
% within Family Income Categories	89.4%	.0%	10.6%	.0%	100.0%
% within Type of Fixed-Deposit Account	24.1%	.0%	21.7%	.0%	23.5%
Income more than ₹ 48000	38	2	5	1	46
Count					

(Contd...)

Table 3 (Contd...)

Family Income Categories	No FD Account	FD Account in Nationalised Bank	FD Account in Private	FD Account in Post Office	Total
% within Family Income Categories	82.6%	4.3%	10.9%	2.2%	100.0%
% within Type of Fixed-Deposit Account	21.8%	100.0%	21.7%	100.0%	23.0%
Total	174	2	23	1	200
% within Family Income Categories	87.0%	1.0%	11.5%	.5%	100.0%
% within Type of Fixed-Deposit Account	100.0%	100.0%	100.0%	100.0%	100.0%

Table 3 shows the distribution of fixed-deposits across income classes. We find that only 13 per cent of the entire population is holding fixed-deposit accounts, but it spans the whole gamut of income classes. Furthermore, like RD accounts almost all FD accounts are held in private NBFCs (88.5 per cent). Even the lowest-income group is also holding FD account in private NBFCs. One reason behind this phenomenon is the interest differential between public sector banks and NBFCs<sup>5</sup>, the other being the aggressive penetration policies pursued by the private NBFCs making the deposits more cost-efficient for the investors.

Life insurance is the only form of insurance that has penetrated this rural market. Life Insurance Corporation of India has a near monopoly in the life insurance market; SBI Life Insurance Company holds three accounts, the rest are with LIC. Private insurance companies have not yet penetrated this market. Table 4 shows the distribution of life insurance across different income classes. Overall, only 10.5 per cent of the total sample purchases the life insurance. The share gradually increases across income classes with a high concentration in the highest income class (76 per cent).

**Table 4 : Distribution of Life Insurance Market Across Income Classes**

Family Income Categories	Life Insurance Category		Total
	No Life Insurance	Life Insurance in Public Sector Company	
Income less than or equal to ₹ 30000	Count	0	67
	% within Family Income Categories	.0%	100.0%
Income Between ₹ 30000 and ₹ 36000	Count	1	40
	% within Life Insurance Category	.0%	33.5%
Income Between ₹ 36000 and ₹ 48000	Count	4	47
	% within Life Insurance Category	4.8%	20.0%
Income more than ₹ 48000	Count	16	46
	% within Life Insurance Category	19.0%	23.5%
Total	Count	21	200
	% within Life Insurance Category	10.5%	100.0%

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To understand exactly how the different institutions have penetrated the rural market, we present the source of information for each category of deposits in Table 5. We find that for the banks, the source of information is the social network whereas for the NBFCs it is predominantly the agents. This turns out to be true for all categories of deposits.

Table 5 : Source of Information

Source of information	Bank/post office				NBFC			
	Agent / staff	Social network	Others	Total	Agent / staff	Social network	Others	Total
Savings account	9(12%)	55(76%)	8 (11%)	72 (100%)	--	--	--	--
Recurring-Deposits	0	3(100%)	0	3	48 (100%)	0	0	48
Fixed-deposits	1(33%)	2(67%)	0	3	21(91%)	2(9%)	0	23



If we consider the insurance companies, they have solely used agents to penetrate the rural markets.

### Calculation of Scores

To judge the degree of financial inclusiveness of individual respondents we

used the scoring method used in psychology. We gave each individual a score based on his / her degree of financial inclusion. The scores were given according to the following Table:

**Table 6 : Scoring Method**

Type of account	Score
Savings Account	2 if yes 0 otherwise
Recurring-Deposit	2 if with banks/post office 1 if with other NBFCs 0 otherwise
Fixed-Deposit	2 if with banks/post office 1 if with other NBFCs 0 otherwise
Life Insurance	2 if yes 0 otherwise

We allotted a higher score to the accounts/ insurance with public sector institution keeping in mind that an important component of financial inclusion is an extension of the public sector institutional services to the people. Moreover, while the savings with public sector institutions have a near-zero default probability, the private sector institutions offer savings instruments with varying probabilities of default. The recent events in West Bengal involving ponzi funds clearly reveal the weakness of the private financial institution.

Using this scoring method, we allotted a score to each individual respondent. The distribution of scores was then divided into quartiles and the quartile values were:  $Q_1=0$ ,  $Q_2=2$ ,  $Q_3=3$  with highest score =4. Based on the quartile values, we divided the respondents into three mutually exclusive categories: those with score zero went to the lowest category, those with score 1 went to the middle category and those with scores two and above (i.e. two, three and four) were clubbed into the highest category. Table 6 gives a distribution of scores across different savings instruments. We found

that no individual holds more than two instruments. The Table reveals that the individuals with highest scores hold a savings

bank, RD or FD account with public sector bank or post office along with a life insurance.

**Table 6: Distribution of Savings Instruments According to Score**

Score	Savings a/c	FD with public sector bank	FD with NBFC	RD with public sector bank	RD with NBFC	Life insurance
1			19		48	
2	52	1	1	2		1
3	3		3			
4	17	2		1		20

### Empirical Results

Our primary aim was to identify the factors that lead to financial inclusion. In order to find out such contributing factors, next we have estimated a multinomial logistic regression model. To this end, we divide the sample into three mutually exclusive groups based on their scores as described in the section above: category-0 (those with score 0), category-1 (those with score 1), and category-2 (those with score  $\geq 2$ ). We use the first category (category-0) as the base category. That is the model makes two sets of estimates: the relative probability of score 1 relative to score 0 and the relative probability of score 2 relative to score 0.

We tried various combinations of independent variables and report the model with lowest BIC and AIC. In this model we include: religion-dummy (RELIGION), education-dummy that gives the education level of main earning member, age of the main earning member, who is the head of the household and our respondent in most cases and income class dummies and land value dummies as explanatory variables. The lowest income class and the lowest land value class have been used as the reference categories. The dummies are further explained in the appendix. The results are presented in Table 7.

**Table 7 : Regression Results**

Category Base category: 0					
	Coefficient	Robust standard error	z	p> z	
Category-1					
Religion	-.5200905	.5617226	-0.93	0.355	
Education-dummy	.8148129	.5010718	1.63	0.104	
Age	-.1568403	.0388107	-4.04	0.000*	
Income category-2	1.892265	.6108303	3.10	0.002*	
Income category-3	17.90957	.6134314	29.20	0.000*	
Income category-4	2.693484	1.250159	2.15	0.031*	
Land value-2	.5214004	.6679764	0.78	0.435	
Land value-3	1.514943	.7488701	2.02	0.043	
Land value -4	1.212097	.722156	1.68	0.093	
Cons	4.533675	1.476424	3.07	0.002	
Category-2					
Religion	-.6726534	.5645735	-1.19	0.233	
Education-dummy	1.926572	.5644831	3.41	0.001*	
Age	-.0406712	.0353182	-1.15	0.250	
Income category-2	2.348531	.664559	3.53	0.000*	
Income category-3	18.12095	.6098955	29.71	0.000*	
Income category-4	5.374984	1.144904	4.69	0.000*	

(Contd...)

Table 7 (Contd...)

Category Base category: 0				
Land value-2	-1.01901	.7197503	-1.42	0.157
Land value-3	.3061822	.7828934	0.39	0.696
Land value-4	.3567969	.7446467	0.48	0.632
Cons	-8230636	1.659811	-0.50	0.620

Number of obs = 195; Wald chi2(18) = 2569.65; Prob> chi2 = 0.0000;

Pseudo R2 = 0.4243; AIC= 283.55; BIC=349.01

\* Significant at 1%

Wald Chi square test shows that the independent variables are jointly significant. There are two sets of estimates in this multinomial logit model, which give the effect of independent variables on the log-odds of category-1 (households with score 1) and category-2 (households with score  $\geq 2$ ), respectively, relative to the base category (households with score 0).

First thing to note is that the three income categories significantly differentiate between category-0 and category-1 as well as category-0 and category-2. The coefficients of the income categories are positive implying belonging to higher income classes increase the probability of belonging to the category with higher score. That is, higher income significantly contributes to financial inclusion by enhancing capacity to save. Asset value as captured by land value-dummy does not have any such effect.

Other than income, there is no other variable that is common to the two sets of estimates. Age differentiates category-1 from category-0 with a negative sign. Since, the age variable refers to the age of the main earning member and decision maker, this implies that younger people have a higher probability of getting a score 1 than their elders. This can be the result of either the younger generation having more information, more income or fewer financial responsibilities. In contrast, the variable that differentiates category-2 from category-1 is the education-dummy, the coefficient of which has a positive sign. This

implies the higher the education level the greater the probability of getting a score at least 2. That is, the higher the education level of the main earner and decision maker, the greater is the probability of financial inclusion of the household.

### Conclusion

Our analysis shows that one of the prime movers of financial inclusion is income. Lack of adequate savings is one of the main reasons behind inability to access the institutional saving-instruments. However, those who can save showed a clear preference for private NBFCs. The reasons are two-fold. NBFCs offer a relatively higher return compared to the public sector institutions. The investors are attracted by this, but lack of financial literacy prevents them to assess the risk profiles of the alternative investment vehicles. Secondly, the private NBFCs have adopted aggressive penetration strategies. They use agents to disseminate information and also to collect funds, both of which reduce the transaction costs of the investors. Life Insurance Corporation of India has also penetrated the rural market by pursuing the same policy.

Our study suggests that the government and the public sector institutions should also adopt the agent-based model as a policy. This will help them to access the poorer section of the population more successfully at a lower transaction cost to those people. Agent-based model should also be adopted to disseminate information and improve financial

literacy, so that the investors have a better grasp of both the return as well as the risk aspect of a saving-instrument.

### Notes

1. Priority Sector Lending, Linking Bank Credit to SHGs and Micro-finance institutions.
2. <http://pib.nic.in/newsite/efeatures.aspx?relid=84236>. accessed on 24.5.2013
3. In West Bengal, there are altogether 37945 villages which include 7452 villages with 2000+ population already provided with banking outlets last year. This year banking outlets are going to be set up in 2444 villages with 1600 to < 2000 population of which 614 villages have already been covered. Rest of the villages (1830) will be covered by March 2013. Roadmap for covering 28140 villages in the population range of 1 to < 2000 has been prepared and submitted to RBI. These villages will be covered within March 2016. Source: <http://www.slbc bengal.com/finDetails>.
4. ₹ 30000 is the first quartile point, ₹ 36000 is the median value and ₹ 48000 is the third quartile value of the distribution of income.
5. The survey reveals that financial Institutions like SAHARA pays an interest of 20 per cent p.a. for fixed-deposit for five years, while this is much lower for nationalised banks, where the maximum interest rate offered is around 10 per cent.

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**Appendix**

Income class category

Income class 1: Income  $\leq$  ₹ 30000 ( $Q_1$ ) (Base category)

Income class 2: ₹ 30000 < Income  $\leq$  ₹ 36000 (Median)

Income class 3: ₹ 36000 < Income  $\leq$  ₹ 48000 ( $Q_3$ )

Income class 4: Income > ₹ 48000

Land value dummy:

Land value\_1: Agricultural land value  $\leq$  ₹ 50000 ( $Q_1$ ) (Base category)

Land value\_2: ₹ 50000 < Agricultural land value  $\leq$  ₹ 96000 (Median)

Land value\_3 ₹ 96000 < Agricultural land value  $\leq$  ₹ 200000 ( $Q_3$ )

Land value\_4: Agricultural land value > ₹ 200000

Education dummy:

Below primary (up to class V) =0

Above primary (above class V) =1

Religion dummy:

Muslim =1

Hindu =0