IOSR Journal of Economics and Finance (IOSR-JEF)
e-ISSN: 2321-5933, p-ISSN: 2321-5925.
PP 67-72
www.iosrjournals.org

Financial Inclusion and Financial Literacy: A Comparative Study in their interrelation between selected urban and rural areas in the state of West Bengal

Shubhra Biswas (Sinha[1]) , Arindam Gupta[2]

Abstract: *Financial inclusion provides access to financial products and services whereas financial literacy ensures awareness about these products and services. The principal objective of this paper is to test empirically whether financial literacy level of any area, viz., urban or rural, may be influenced by financial inclusion of that area along with other demographic variables. A comprehensive questionnaire is designed to cover major aspects of financial knowledge and household financial planning for the purpose of collection of primary data relating to calculation of financial literacy score. A total of 90 respondents, 25 from rural and 65 from urban areas, could be finally reached from Kolkata and its two adjoining districts, 24 Parganas South and 24 Parganas North. The mean financial literacy of rural respondents is found to be much lower than that of urban respondents. The CRISIL Inclusix score of the selected districts is taken as a measure of financial inclusion. The findings of multiple regression show that Occupation, Educational Background and Household Income are statistically significant demographic factors influencing financial literacy. Financial Inclusion Index is also found to have a statistically significant relationship with financial literacy. Principal Component Analysis results also support the same findings.*

Keywords *–Financial Inclusion, Financial Knowledge, Financial Literacy, Household Financial Planning*

I. Introduction

The term financial literacy refers to an individual's set of skills and knowledge that allows him to make informed and effective decisions through an understanding of finances. OECD has defined financial literacy as 'A combination of financial awareness, knowledge, skills, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial wellbeing.' On the other hand financial inclusion relates specifically to awareness, access and use of financial products. According to OECD, 'Financial inclusion refers to the process of promoting affordable, timely and adequate access to a wide range of regulated financial products and services and broadening their use by all segments of society through the implementation of tailored existing and innovative approaches including financial awareness and education with a view to promote financial well-being as well as economic and social inclusion.' The range of products and services that can be considered within the definition is wide, and includes basic banking provision, savings and investment products, remittance and payment facilities, credit and insurance.

Financial inclusion and financial literacy are twin pillars. While financial inclusion acts from supply side providing the financial products and services that people demand, financial literacy stimulates the demand side – making people aware of what they can demand (Subbarao, D. , 2010).Developing economies like India face the problem of low level of literacy, poor accessibility and low demand. The health of the nation's financial system depends upon the ability of its people to effectively manage their own finances.

Over the recent years, financial literacy has become a major area of concern in India. The people at large lack basic knowledge about financial matters concerned with day-to-day money management and saving for long term. The state of West Bengal in the eastern part of India has been selected for the purpose of the study. One grave area of concern for West Bengal is the recurrent financial frauds that have hit the state time and again. The Sanchayita fraud in 1979 and frauds involving Sanchayani and Verona in the late 1980's were some of the early examples. In 2013, the collapse of the Saradha Group (incorporated in 2008) exposed a financial scam with an estimated loss of Rs. 20000-30000 crore. News are widespread about groups like MPS, iCore, etc. remaining engaged in collecting money from public at large through similar deposit schemes. As also reported in the news, people from rural and semi-urban areas, particularly comprising the daily earners and others engaged in the unorganized labour market were mostly affected in the latest scams yet people from the urban areas may have remained evasive in letting the news and media persons know about their status in this

[1]Shubhra Biswas (Sinha[1]) *Amity School of Business, Amity University, Kolkata, India*
[2]Arindam Gupta *Department of Commerce with Farm Management, Vidyasagar University, Midnapore, India*

respect. Thus, in the backdrop of the scams in West Bengal, a study into the status of financial literacy and its relationship with financial inclusion is particularly relevant.

1.1 Objectives of the Study

The principal objective of this paper is to test empirically whether financial literacy level of any area, *viz.*, urban or rural, may be influenced by financial inclusion of that area along with other demographic variables. In aiming so, the study naturally has to assess the status of financial literacy in the selected areas in the state of West Bengal.

II. Literature Review

Various studies have been conducted from time to time on Financial Literacy and Financial Inclusion across the globe and also in India. *Hilgert, Hogarth and Beverly (2003)* have observed in an US based study that financial knowledge could be statistically linked to financial practices related to cash-flow management, credit management, savings and investment. *Campbell (2006)* observessome US households making serious investment mistakes like non-participation in risky asset markets, under-diversification of risky portfolios and failure to exercise options for refinancing mortgages. *Thorat (2007)* in her paper opined that one common measure of Financial Inclusion was the percentage of adult population having bank accounts. On the basis of available data, it was found that on an all India basis, 59 per cent of adult population in the country has bank account or in other words 41 per cent of the population is unbanked. In rural areas the coverage is 39 per cent against 60 per cent in urban areas. The extent of exclusion from credit markets is much more, as number of loan accounts constituted only 14 per cent of adult population.*Lusardi* and *Mitchell (2011)* measure financial knowledge across eight countries, *i.e.*, Germany, New Zealand, United States, Japan, Sweden, Russia, Netherlands and Italy, and conclude that financial literacy is very low around the world, irrespective of the level of financial market development and the type of pension provided. They have further found that women and relatively older population were having less knowledge in respect of financial matters. *Bihari (2011)* pointed out that the major reasons for failure of financial inclusion in India in the past in spite of initiatives were: a) absence of technology, b) absence of reach and coverage, c) inefficient delivery mechanism, d) absence of business model, and e) lack of compassion for poor among rich. But, now there is an increase in focus on inclusive growth. Banking technology has progressed fast enough and more importantly the realization that the poor is bankable has arrived. *Nash (2012)* observes inequalities in financial literacy across different sections of population in India. *Ramakrishnan (2012)* has identified financial literacy in the demand side of financial inclusion in a theoretical model. *Diagne and Villa (2012)* have found widespread debt and financial illiteracy among people living under the poverty line in France. Insufficient financial literacy was visible more in women, elderly and also those who were divorced, separated or widowed. *Thilakam (2012)* has observed that rural masses in India are comfortable with the conventional investment choices and are more risk-averters than risk-takers. *Seshan* and *Yang (2012)* have provided a savings-oriented financial literary workshop to the migrant Indian workers in Qatar and observed large positive effects on migrant savings and their remittance to their family after the workshop. *Wood, Downer, Lees* and *Toberman (2012)* have found that couples in Britain do not typically enjoy managing their household finance and also that few people emerge to be truly active in putting retirement provision in place. *Mahdzan* and *Tabiani (2013)* have conducted an exploratory study in Malaysia which reveals that savings regularity, gender, income and educational level influence the probability of savings positively. *Bhushan* and *Medury (2013)*observe that overall financial literacy level among the salaried individuals in India is not encouraging. The level of financial literacy varies significantly among respondents based on various demographic and socio-economic factors like gender, education, income, nature of employment and place of work whereas it does not get affected by age and geographic region. *Memdani and Rajyalakshmi (2013)* compared financial inclusion in India with that of the United States, United Kingdom, Germany, Russia, Brazil and China. They have found, considering the vastness of India, that the progress was too small compared to the other countries. They conclude that though financial inclusion has picked up in India in the last few years with many new innovations like mobile banking, ultra small branches etc., still it is far from adequate. *Bhushan (2014)* hasinferred that Indians with low level of financial literacy invest their money in traditional financial products instead of new age financial products with higher returns.

III. Methodology

3.1 Sample and data source

For the purpose of the study, a survey has been conducted amongst individuals residing in the state. Out of 20 districts of West Bengal, the study covers 3 districts, *viz.*, Kolkata, North 24 Parganas and South 24 Parganas. The first two districts would mainly cover city and urban areas whereas the last one has many rural and remote places, giving an ideal background to compare the literacy level based on domicile. Primary data from the respondents has been collected by using a structured questionnaire. A total of about 90 respondents have been interviewed to constitute the sample of this study. On an average, 30 respondents have been found for each of the above districts.

3.2 Questionnaire for finding out Financial Literacy and Financial Inclusion Index

A comprehensive questionnaire has been designed to cover major aspects of financial knowledge and household financial planning for the purpose of collection of primary data. It includes questions to examine the individual's financial literacy in matters related to general awareness, savings, borrowings, insurance, investment and retirement planning. The respondents have been asked questions on demographic issues, issues concerning general awareness on financial matters, personal finance and household finance. A financial knowledge score and a household financial planning score have been calculated for each individual and based on these two scores, a composite financial literacy score has been calculated with equal weightage to both the components. The mean financial literacy scores of rural and urban samples were calculated separately and compared to each other.

A measure of financial inclusion is obtained from CRISIL Inclusix Scores in the selected districts. CRISIL Inclusix is India's first comprehensive measure of financial inclusion in the form of an index. It is a relative index that has a scale of 0 to 100, and combines three very critical parameters of basic financial services, *viz.*, branch penetration (BP), deposit penetration (DP), and credit penetration (CP) into one single metric. For each of these parameters, CRISIL evaluates financial inclusion at the national/ regional/ state/ district level vis-à-vis a defined ideal score. A CRISIL Inclusix score of 100 indicates the ideal state for each of the three parameters. The latest available scores for 2013 for the 3 selected districts have been considered for the purpose of the study.

3.3 Research Hypothesis

For the purpose of testing the relationship between financial literacy of rural and urban respondents, and the relationship between demographic variables and financial inclusion index with financial literacy score, the following hypotheses are proposed:

Hypothesis 1: The mean financial literacy score of rural and urban samples is equal.

Hypothesis 2: There is no association between demographic variables and financial inclusion index with financial literacy.

3.4 Statistical tools

The t-test for the difference in means has been used to test the null hypothesis that the means for both sample groups (rural and urban) are equal, versus the alternative hypothesis that the mean for one of the groups is larger than the mean for the other group (1-tail). Regression Analysis and Principal Component Analysis have been used to analyse the association between demographic variables and financial inclusion index with financial literacy.

IV. Data Analysis

4.1 Levene's Test for Equality of Variances and t-test for Equality of Means

The mean financial literacy score of 25 rural and 65 urban respondents were computed.

μ_1 (mean financial literacy score of 25 rural respondents) = 3.96

μ_2 (mean financial literacy score of 65 urban respondents) = 13.2615

The null hypothesis (H_0) and alternative hypothesis (H_1) of the independent samples T test can be expressed as:

H_0: $\mu_1 = \mu_2$ (the two sample means are equal)

H_1: $\mu_2 > \mu_1$ (the sample mean for urban respondents is greater than the sample mean for rural respondents)

On comparison of means using t-test in SPSS, the following results were obtained:

Table-01 : Group Statistics					
	Domicile	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
Financial Literacy Score	Rural	25	3.9600	2.94010	.58802
	Urban	65	13.2615	5.40624	.67056

Table-02 : Independent Samples Test										
		Levene's Test for Equality of Variances		**t-test for Equality of Means**						
		F	Sig.	t	df	Sig. (1-tailed)	Mean Diff.	Std. Error Diff.	95% Confidence Interval of the Diff.	
									Upper	Lower
Financial Literacy Score	Equal variances assumed	20.172	.000	-8.133	88	.000	-9.30154	1.14361	-11.57422	-7.02886
	Equal variances not assumed			-10.429	77.720	.000	-9.30154	.89186	-11.07720	-7.52588

From Levene's Test for Equality of Variances, the null hypothesis may be rejected and it can be concluded that the mean financial literacy score for rural respondents and urban respondents is significantly different.

From t-test for Equality of Means, the sign of the mean difference corresponds to the sign of the *t* value. The negative *t* value indicates that the mean financial literacy score of the first group, that is rural respondents, is significantly lower than the mean for the second group that is urban respondents. The associated *p* value is very small and we can reject the null hypothesis.

The Confidence Interval of the Differenceis [-11.57422, -7.02886], which does not contain zero; thus agreeing with the small *p*-value of the significance test.

4.2 Regression Analysis:

The overall regression model and its ANOVA are summarized below:

Table-03: Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	0.876[a]	0.767	0.738	3.39512
a. Predictors: (Constant), Financial Inclusion Index, Age, Gender, Number of family members, Educational Qualification, Marital Status, Occupation, Position in the family, Household Income, Domicile				

Table-04: ANOVA						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	2998.478	10	299.848	26.013	.000[b]
	Residual	910.622	79	11.527		
	Total	3909.100	89			

From Table-03, It is observed that the value of R=0.876. Thus, there is a high degree of positive correlation among the independent variables and dependent variable.

Table-04 reports how well the regression equation fits the data. Here, $p < 0.0005$ indicates that the regression model significantly predicts the outcome variable.

Table-05 Co-efficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.385	3.149		-.122	.903
	Age	-.302	.368	-.061	-.822	.414
	Gender	.520	1.037	.039	.501	.618
	Domicile	-4.887	1.700	-.332	-2.875	.005
	Occupation	.787	.304	.257	2.586	.012
	Educational Background	1.794	.521	.500	3.444	.001
	Household Income	1.188	.373	.342	3.184	.002

	Position in the family	1.100	1.052	.107	1.046	.299
	Marital Status	-.103	.961	-.008	-.107	.915
	Number of family members	-.395	.305	-.078	-1.298	.198
	Financial Inclusion Index	.072	.024	.199	3.023	.003

The Regression equation is therefore:
Financial Literacy Y= -0.385 - 0.302 X_1(-0.822) + 0.520 X_2(0.501) - 4.887 X_3 (-2.875) + 0.787 X_4 (2.586)* + 1.794 X_5 (3.444)** + 1.188 X_6 (3.184)** + 1.100 X_7 (1.046) -0.103 X_8(-0.107) -0.395 X_9(-1.298) + 0.072 X_{10}(3.023)**
Where, X_1 = Age, X_2 =Gender, X_3=Domicile, X_4=Occupation,
X_5= Educational Background X_6= Household Income X_7= Position in the family X_8= Marital Status
X_9= Number of family members X_{10}= Financial Inclusion Index
Figures in the parentheses in the above equation indicate score of t statistic.** indicates significance at 1% level and * at 5% level.
From the above table it can be concluded that Occupation, Educational Background, Household Income and Financial Inclusion Index are statistically significant independent variables which have an effect on financial literacy.

4.3 Principal Component Analysis

Table- 06 : KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.667
Bartlett's Test of Sphericity	Approx. Chi-Square	488.860
	df	45
	Sig.	.000

Table-07: Total Variance Explained									
Compo nent	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumul-ative %	Total	% of Variance	Cumul-ative %	Total	% of Variance	Cumul-ative %
1	3.712	37.121	37.121	3.712	37.121	37.121	3.399	33.994	33.994
2	2.125	21.251	58.372	2.125	21.251	58.372	2.185	21.851	55.845
3	1.286	12.856	71.228	1.286	12.856	71.228	1.538	15.383	71.228
4	.906	9.059	80.287						
5	.736	7.360	87.647						
6	.419	4.187	91.833						
7	.327	3.268	95.101						
8	.239	2.390	97.491						
9	.164	1.645	99.136						
10	.086	.864	100.000						
Extraction Method: Principal Component Analysis.									

Table-08: Rotated Component Matrix			
	Component		
	1	2	3
Domicile	.912		
Educational Qualification	.906		
Household Income	.874		
Occupation	.729		
Financial Inclusion Index	.622		
Position in the family		.869	
Age		.776	
Marital Status		.751	
Number of family members			
Gender			.889
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization			

Kaiser-Meyer-Olkin (KMO) Test and Bartlett's Test of Sphericity determine the level of adequacy of principal component analysis. The KMO Measure of Sampling Adequacy reflects score of 0.667, which is above the recommended 0.5 level and the Bartlett's Test of Sphericity is significant at (p>0.001) levels.

Table-07 shows the importance of each of the ten principal components. Only the first three components have eigen values over 1.00, and together these explain 71.228% of the total variability in the data.
Table-08 shows the factor loadings that result from Varimax rotation. In the rotated factors, Domicile, Educational Qualification, Household Income, Occupation and Financial Inclusion Index all have high positive loadings on the first factor, whereas Position in Family, Age and Marital Status have high positive loadings on the second factor and gender has high positive loading on the third factor.
Thus Principal Component Analysis results also support the same findings.

V. Conclusion

The study, in fine, concludes about a very low level of financial literacy in the selected districts of West Bengal which is far from satisfactory. The concepts as developed in the study as the key constituents of financial literacy like 'financial knowledge' and 'financial planning ability' are thus proven to be poor too among the sample respondents. This may well be one of the major reasons why the recurrent financial frauds have hit the state time and again. The mean financial literacy of rural respondents is found to be much lower than that of urban respondents. This can be related to the fact that financial inclusion in the rural areas is lower in comparison to that in the urban areas. Financial Inclusion Index is also found to have a statistically significant relationship with financial literacy. Hence, financial literacy and financial inclusion are complimentary to each other. Further, occupation, educational background, household income are found to be statistically significant demographic factors which have an association with financial literacy.

References

[1]. Lusardi, and O.S. Mitchell, Financial literacy around the world: An overview,*Journal of Pension Economics and Finance*,*Cambridge University Press, Vol. 10(04),* 2011, 497-508.
[2]. Wood, K. Downer, B. Lees, and A. Toberman, Household financial decision making: Qualitative research with couples, Department for Work and Pensions Research Report No. 805, London: DWP. 2012.
[3]. D.R. Nash, Financial literacy: An Indian scenario, *Asian Journal of Research in Banking and Finance*, *Vol.2 Issue 4,* April 2012, 79-84.
[4]. J. Y. Campbell, Household finance, *The Journal of Finance.Vol. LXI, No. 4,* August 2006, 1553-1604
[5]. L. Memdani, and K. Rajyalakshmi, Financial Inclusion in India, *International Journal of Applied Research and Studies (iJARS) ISSN: 2278-9480 Volume 2, Issue 8,* Aug 2013
[6]. M.A Hilgert, J. M Hogarth, and S.G. Beverly, Household financial management: The connection between knowledge and behavior, *Federal Reserve Bulletin*, *89(7),* July 2003, 309-322
[7]. N.S. Mahdzan, and S. Tabiani, The impact of financial literacy on individual saving: An exploratory study in the Malaysian context, *Transformations in Business and Economics*, *Vol. 12, No. 1 (28),* 2013, 41-55.
[8]. P. Bhushan, and Y. Medury, Financial literacy and its determinants, *International Journal of Engineering, Business and Enterprise Applications*, *Vol. 4, No. 2,* May-March 2013, 155-160.
[9]. P. Bhushan, Relationship between financial literacy and investment behavior of salaried individuals, *Journal of Business Management & Social Sciences Research (JBM&SSR), Vol. 3, No.5,* May 2014, 82-87.
[10]. S.C. Bihari, Growth Through Financial Inclusion In India, *Journal of International Business Ethics Vol.4 No.1,* 2011.
[11]. U. Thorat , Financial Inclusion –The Indian Experience, *RBI Monthly Bulletin* July 2007 1165-1172

Proceedings Papers:

C. Diagne, and C. Villa , Financial literacy and debt literacy amid the poor,*Conference Paper at 25th Annual Australasian Finance & Banking Conference*, Sydney, Australia, 2012.
C. Thilakam, Financial literacy among rural masses in India, *The 2012 International Conference on Business and Management*, Phuket – Thailand,2012.
G. Seshan, and D. Yang, Transnational household finance: A field experiment on the cross-border impacts of financial education for migrant workers, *Qatar Foundation Annual Research Forum Proceedings*, Vol. AH03, 2012.
R. Ramakrishnan, Financial literacy and financial inclusion,*Conference Paper at 13th Thinkers and Writers Forum 29th SKOCH Summit 2012 Refueling Growth*, Mumbai India, 2012.
D. Subbarao, Financial Education: Worthy and Worthwhile, *RBI-OECD International Workshop on Financial Literacy*, Bengaluru, March 22,2010.