



## **Impact of Financial Literacy on Household Decision-Making: A Study in the State of West Bengal in India**

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### **ABSTRACT**

The study assesses the status of financial literacy in West Bengal and finds its impact on household decision-making of 600 respondents from eight selected districts of the state. Financial literacy of female and rural respondents is found to be lower. Higher income and education remain the other significant determinants of financial literacy. Financial literacy is found to significantly affect saving decision, investment decision, borrowing propensity and borrowing quality, the first three being positively and fourth being negatively influenced by financial literacy. However, on retirement planning no significant impact is observed.

**Keywords:** Financial Literacy, Household Decision Making, Retirement Planning, Borrowing Quality

**JEL Classifications:** D15, G51, G53, J32

### **1. INTRODUCTION**

In a country like India, with diverse social and economic profile, financial literacy is found low among the people in general and very low among the resource-poor class in particular. The OECD International Network on Financial Education (INFE) Report, 2017<sup>1</sup> on adult financial literacy awarded a score of 11.9 to India against a maximum possible score of 21 in a survey among the G20 countries, the average score of such countries being 12.7. OECD has developed a questionnaire on measuring financial literacy taking input from 35 member countries and a few other observer countries. It has defined financial literacy as “a combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial well-being” (OECD, 2015). Widespread deficiency in financial literacy has been observed among the people of any country in general and those of the developing countries in

particular. Lower financial literacy among the poorer sections of people coupled with their meagerness and uncertainty in income, results in a vicious circle wherein poor household decision-making causes them to live under persistent financial pressure. Financial literacy enhancement could have helped this resource-poor population to access relevant information for becoming a part of the formal financial system and for improving their financial situation in due course. Lack of financial literacy has also resulted in this section of the population to be always dependent upon the informal financial system as controlled by money-lenders.

One principal reason for choosing the study for a state like West Bengal which is infamous in India for the recurrent financial frauds. The state is situated geographically in the eastern part of India covering a total area of 88,752 km<sup>2</sup> with a total of 23 districts. The state's economy is predominantly dependent upon agriculture and upon medium-sized industry. The role of service industry and heavy industries in generating state revenue has increased in recent time. According to the 2011 national census, West Bengal has 7.55% of India's population and thus the fourth-

<sup>1</sup> <http://www.oecd.org/daf/fin/financial-education/G20-OECD-INFE-report-adult-financial-literacy-in-G20-countries.pdf>

most-populous state in the country with a total population of 91,347,736. Population density of 1029 inhabitants per square kilometer makes it the second-most densely populated Indian state. The literacy rate of the state is 77.08%, higher than the national average of 74.04%. After the Sanchayita, Sanchayani and Verona scams, which had ruined millions of small depositors in the state in the 1980s, the Saradha Group (incorporated only in 2008) emerged to be the centre of a ponzi scheme scam that was unfolded in 2013. The scam rattled the whole state with an estimated loss of public money worth ₹ 200-300 billion involving nearly 1.7 million depositors. The other financial scams were thereafter exposed one after another in the companies or groups like Rose Valley, MPS, i-Core, Prayag, etc. In the state, there are over 20 million small savings depositors, at least 15% or 3 million of whom are from rural areas and economically weaker sections.

The overall objective of the study is to assess the status of financial literacy in the state of West Bengal with reference to some selected districts and examine the relationship between financial literacy and household decision making.

Thus, the study aims:

- To examine the status of financial literacy in the state of West Bengal with reference to the selected districts,
- To examine the demographic and socio-economic factors like gender, domicile, age band, education level, work situation and income band which would possibly influence the level of financial literacy, and
- To examine the impact of financial literacy level on household decision making like saving decision, investment decision, retirement planning, borrowing (propensity and quality), controlling the effect of the demographic and socio-economic factors like gender, domicile, age band, education level, work situation and income band.

## 2. PREVIOUS STUDIES AND RESEARCH GAP

Several studies have investigated the link between financial literacy and household financial decision making like budgeting, saving, borrowing and investment with an aim to find out whether higher level of financial literacy could lead to better household financial decisions. Chen and Volpe (1998), in a U.S.-based study among college students have observed that less knowledge of financial matters among respondents tend to hold wrong opinions and make erroneous decisions in respect of savings, borrowing and investments. Bernasek and Bajtelsmit (2002) found participation of women in household financial decisions to increase with their share of household income and formal financial education. Bernheim and Garrett (2003) investigate into the impact of employer-based financial education on the personal savings of individuals. In the US-based study, such education is found to stimulate savings, both for retirement as well as for general purpose. In another US based study, Hilgert et al. (2003) have observed that increase in knowledge and experience could lead to improvement in cash-flow management, credit management, savings and investment. In an UAE-based study, Al-Tamimi and Kalli (2009) observed

investment decision to be most influenced by factors including religious causes, reputation of the organization, perceived ethics of the organization and aim for diversification, and also by the level of financial literacy.

Mandell and Hanson (2009) have gathered fact to support that high school and college courses in money management improve financial behaviour related to credit card payment, worrying about debt, timely payment of credit card bills, cheque book balancing, cheque bouncing and perceived sufficiency of savings. Abreu and Mendes (2010), from a survey with 1268 Portuguese investors, indicate that their educational levels, financial knowledge and the sources of information regarding markets and financial products, all have a significant impact on different assets that comprise their portfolio. Lusardi and Mitchell (2011) observed that respondents with higher levels of financial literacy were more likely to plan for retirement, thus increasing their likelihood to be better prepared for their old age. Financial literacy is found to enhance the likelihood of participation in a pension fund also when controlling for its potential endogeneity in Fornero and Monticone (2011) study in Italy. Sekita (2011) has found in Japan that financial literacy increases the likelihood of having a savings plan for retirement. Due to the dominant role of New Zealand's universal public pension system imbuing special sort of security, financial literacy is not found significantly associated with retirement planning (Crossan et al., 2011).

In a country like Russia with widespread public pension provisions, Klapper and Panos (2011) observed financial literacy to be significantly related to retirement planning comprising private pension funds and schemes. Almenberg and S ave-S oderbergh (2011) have observed significant differences in financial literacy among the planners and non-planners in Sweden with planners having higher levels of financial literacy compared to the non-planners. Bucher-Koenen and Lusardi (2011) in Germany and Arrondel et al. (2013) in France have observed highly significant positive correlation between financial literacy and the propensity to plan for retirement. Agnew et al. (2012) have observed in a sample of 1024 Australians to find out a statistically significant relationship between financial literacy and retirement planning. Thilakam (2012) has observed that rural masses in India are more risk averters than risk takers, thus comfortable with conventional investment choices. Behrman et al. (2012) have seen among individuals a probability of contributing more to their pension savings with having more financial literacy. Van Rooij et al. (2012) provide evidence of a strong positive association between financial literacy and net worth, even after controlling for many determinants of wealth. They observe financial knowledge to increase the likelihood of investing in the stock market, allowing individuals to benefit from the equity premium. They further observe financial literacy to be positively related to retirement planning and the development of a savings plan has been shown to boost wealth. Beckmann (2013) has observed individuals in Austria with higher levels of financial literacy, especially with respect to inflation, more likely to save using more than one interest-bearing saving instrument and to invest in pension funds too.

Agarwal and Mazumder (2013) conclude from their study that individuals with greater mathematical ability are more patient and therefore less likely to make financial mistakes in time trade-off situations of a financial decision. Brown and Graf (2013) have found financial literacy to be strongly correlated with voluntary retirement savings in Switzerland. Boisclair et al. (2014) have found among Canadians a strong interrelation between financial literacy and retirement planning in a multiple regression analysis, even after controlling for the demographic variables and income. Bhushan (2014) has found that respondents with higher levels of financial literacy demonstrate higher preference for investments like mutual funds, debentures, stock market investments, bonds and commodity market instruments, life insurance, public provident fund and pension fund as compared to those with lower levels of financial literacy. Gaudecker and Von (2015) have observed that nearly all households with high financial literacy scores or those who relied on professionals or private contacts for advice could achieve reasonable investment outcomes than those who trusted their own decision-making capabilities. Bajo et al. (2015) have observed past trading experience, schooling and professional financial background are found to be very effective in reducing investor's risk aversion in Italy. Koti (2019) finds 30% of 100 respondents from Dharwad district of Karnataka, all of whom are women, as comfortable in making their investment decisions except handling mutual fund investment and anticipating the return of it. The women respondents are found to be careful during investments; they know very well about the risk involved in markets and the volatility. He also could observe their skill in spreading across various portfolios to lower the risk.

Using data from the Irish Longitudinal Study on Ageing (TILDA), Nolan et al. (2019) find significantly higher levels of financial literacy among men, those with higher levels of education and cognition, and the self-employed. They also observe financial literacy associated with higher total household wealth, lower financial stress and higher expected retirement income. They could however find little evidence that those with higher levels of financial literacy are more likely to have various forms of supplementary pension cover. Kristanto and Gusaptono (2020) have observed investment decision-making to involve cognitive, psychological, social and behavioural aspects. Based on the response of Sharia Bank customers in Indonesia, their study reveals that (1) financial knowledge has a positive effect on investment decisions, (2) financial behaviour has a positive effect on investment decisions, (3) financial awareness has a positive effect on investment decisions, and (4) financial attitudes has a positive effect on investment decisions. Baihaqqy et al. (2020) observe the pattern of influence consistently both in Indonesia and in emerging market countries that financial literacy has an influence on investment decisions and that the same similar to that of developed countries.

In studies mentioned above exposing the relationship between financial literacy and investment decision making, the methodology used does not seem to be appropriate to tackle qualitative variable like risk propensity of investment decision. No study has also been seen exposing the relationship of financial literacy with borrowing status (and, propensity). We find studies in India and outside

to study the impact of financial literacy on household decision making, but a few only in India about the impact on retirement planning in particular. In the state of West Bengal, no such study is found even till the time of preparation of this article. This is mainly because of the people of the state mainly poured in fund into small savings investment of the government because of which the state continuously topped in respect of such investment in the country over the past few years. A few vulnerable sections of the populace have however made unsafe investment practices and suffered a lot because of being defrauded in schemes relating to chit fund. But pension schemes had no special presence in the state, as also in India unlike the advanced countries. Those who are employed in the government sector have facility of drawing pension from the government till recently as the employer. The larger population who are either self-employed or employed in the private sector depend on personal savings or upon the income of the next generation. So the whole population had somehow blocked their thought process to invest in retirement planning schemes which can release fund at monthly or any other preferred periodic interval like pension. So, studies are also confined to the assessment of financial literacy and awareness of the people or their investment choices, not going into further details of investment schemes, specially the designated retirement planning schemes.

### 3. RESEARCH METHODOLOGY

#### 3.1. Sample Size and Method

As many as 600 sample respondents have been considered for the study as selected from as many as eight districts of West Bengal including two from the northern part of the state. These selected districts represent more than 50% population of the state. These include the state capital, Kolkata (Calcutta) considered to be a cosmopolitan city and its two surrounding districts, North 24 Parganas and South 24 Parganas, which were worst hit by the Saradha scam as per various newspaper reports. The other districts were also chosen purposively to represent various geographical and economic features of the state, thus to include Purba Medinipur district having the coastal belt with comparatively more economic development than its neighbouring Paschim Medinipur district having forest areas with traditional underdevelopment. The study also included Bardhaman (before its division) having representation of both agricultural as well as industrial population. The two districts selected from the northern part of the state include Uttar Dinajpur and Dakshin Dinajpur. After selection of districts through purposive sampling, respondents within the districts are selected at random. The sample number of respondents from each district has been chosen in the ratio of the district population of the total sample size. A district-wise number of sample respondents and their calculated mean financial literacy scores are given in Table 1.

#### 3.2. Questionnaire

The OECD/INFE Toolkit (2015), a structured questionnaire for measuring financial literacy, has been used in this study with permission from the OECD Secretariat. The questionnaire is also a comprehensive one designed to cover major aspects of financial literacy and its relation to household decision making. It includes questions to examine the individual's financial literacy measured in terms of financial knowledge or awareness. It also

**Table 1: District-wise number of sample respondents**

Domicile	No. of respondents	Mean financial literacy (In a scale of 1–21)
Kolkata	59	18.25
Dakshin Dinajpur	22	14.94
North 24 Parganas	130	14.84
Bardhaman	101	14.82
Paschim Medinipur	77	14.41
South 24 Parganas	106	13.59
Purba Medinipur	66	12.95
Uttar Dinajpur	39	12.09
Total	600	14.51

has questions on household decisions like savings, borrowings, insurance, investment and retirement planning. The respondents were asked questions on demographic issues, issues concerning general awareness on financial matters, personal finance and household finance. Being a standard questionnaire as used to find out literacy among the G-20 countries, no separate statistical reliability testing was conducted.

### 3.3. Variables Used in the Study

In the study, financial literacy and four selected components of household decision-making, i.e. saving, investing, retirement planning and borrowing are used as the principal dependent variables.

Financial literacy comprises financial knowledge, financial behaviour and financial attitude. As per the questionnaire, the overall financial literacy score is obtained as the sum of these three scores and can take any value between 1 and 21.

Financial knowledge denotes understanding and awareness of the respondent about financial concepts like time value of money, simple and compound interest, risk and return, inflation and diversification and the use of this understanding to solve financial problems. As per the questionnaire, it can take any value ranging from 0 to 7.

Financial behaviour is the ability of the respondent in money management matters related to day-to-day household financial decision making like budgeting, saving actively, considered purchasing, timely payment of bills, keeping watch of financial affairs, long-term financial goal setting, choosing financial products and borrowing to make ends meet. As per the questionnaire, it can take any value in the range from 0 to 9.

Financial attitude is an attribute of a respondent that determines his/her tendencies towards financial choices to be made like living for the present vis-à-vis planning for the future, satisfaction in spending money vis-à-vis saving it for the long term and outlook towards money being meant to be spent vis-à-vis saving it to some extent for the future. As per the questionnaire, it can take any value in the range from 1 to 5.

Savings decision refers to the decision regarding respondent's choice of saving avenues. A score of 0 is assigned in case of no active saving or saving cash at home or in wallet. A score of 1 is

assigned in case of respondents building up a balance of money in bank account, giving money to family to save on respondents' behalf or saving in an informal savings club. The highest score of 2 is assigned in case of buying financial investment products or saving in some other way including remittances, buying livestock, gold or property.

Investment decision refers to the decision regarding respondent's choice of investment avenues. It is measured for a lesser sample size, including only those respondents who have engaged in some kind of investment activities. A score of 0 is assigned in case of respondents having savings account. A score of 1 is assigned in case of respondents opting for insurance products, 2 for those investing in retirement products, bond and mutual funds, and 3 for those investing in stocks and shares.

Retirement planning is measured on the basis of the different ways in which the respondent plans to fund his/her retirement. A score of 3 is given in case the respondent chooses to fund his/her retirement through a private pension plan or from income generated by financial or non-financial assets. A score of 2 is given in case the respondent chooses to fund his/her retirement from selling financial assets. If s/he opts to fund it by drawing a government pension/old-age benefit from an occupational or workplace pension plan or from selling non-financial assets, s/he is given a score of 1. If his/her response to this question is "don't know" or s/he refuses to answer the entire question or if s/he plans to rely on spouse/partner/children/family members to support him/her, a score of 0 is given.

Borrowing propensity refers to one's tendency to behave in a particular way with regard to borrowing. The borrowing propensity score is measured on the basis of the extent that a respondent agrees or disagrees to a particular statement "I am in too much debt right now" using a scale of 1–5 where 1 indicates that s/he completely agrees to the statement and 5 indicates that s/he completely disagrees. If the option chosen is 1 or 2, the said propensity score is 1, whereas the score will be 0 in case of options 3, 4 or 5.

Borrowing quality refers to the standard of credit opted for. It is measured only for those respondents who have borrowed money. The score given is 2 in case of borrowing by way of mortgage or secured loan, 1 in case it is by way of unsecured loan or microfinance loan and 0 in case it is by way of credit card only. This is because credit card is just a debt instrument in the hand of an individual which helps to prevent the immediate use of cash in case of shopping or in case of emergency, the credit just being created to the tune of money used out of the sanctioned limit. However, this is no substitute of borrowing for which the same individual is required to prepare proper documents. To avoid attracting interest on the amount of credit outstanding in his/her credit card, an individual is required to pay off the dues within a stipulated period of time, say 40 days. The other types of borrowing, whether secured or unsecured, are usually for a much longer period of time. Hence, holding credit card cannot be qualitatively considered as a good borrowing decision although credit cards are offered more to wealthy individuals by allowing them to qualify for higher credit limits.

Gender, Domicile and Age are the three demographic variables and Education level, Work situation and Income band are the socio-economic variables which have been used as independent variables in the study. Besides these variables, Retirement planning confidence is used as an independent variable only for explaining retirement planning as the dependent variable.

Retirement planning confidence is about having done a good job in making financial plans for retirement measured on a scale from 1 to 5 where 1 is very confident and 5 is not at all confident. It is scored as 2 signifying high confidence in case of options 1 and 2. A score of 1 against options 3, 4 or 5 is assigned which is indicative of low confidence while a 0 score is assigned for no retirement plan.

### 3.4. Research Hypotheses

The following hypotheses are finally tested to conclude the findings of the study with statistical significance:

1. (a) Null Hypothesis ( $H_0$ ): There does not exist any significant inter-district difference in financial literacy.  
 (b) Null Hypothesis ( $H_0$ ): There exists no significant difference in financial literacy between urban areas and rural areas.  
 (c) Null Hypothesis ( $H_0$ ): There exists no significant difference in financial literacy between male and female respondents.
2. Null Hypothesis ( $H_0$ ): There is no significant impact of the demographic and socio-economic factors like gender, domicile, age band, education level, work situation and income band on financial literacy.
3. Null Hypothesis ( $H_0$ ): There is no significant impact of financial literacy (excluding the saving score component), and demographic and socio-economic factors like gender, age band, education level, work situation and income band upon probability of better saving decision.
4. Null Hypothesis ( $H_0$ ): There is no significant impact of financial literacy, and demographic and socio-economic factors like age band, education level, work situation and income band upon probability of riskier investment decision making.
5. Null Hypothesis ( $H_0$ ): There is no significant impact of financial literacy, retirement planning confidence, and demographic and socio-economic factors like age band, education level, work situation and income band upon probability of better retirement planning.
6. Null Hypothesis ( $H_0$ ): There is no significant impact of financial literacy and socio-economic factors like work situation and income band upon probability of better borrowing propensity.
7. Null Hypothesis ( $H_0$ ): There is no significant impact of financial literacy, and demographic and socio-economic factors like age band, work situation and income band upon probability of better borrowing quality.

### 3.5. Statistical and Econometric Techniques Used

The statistical and econometric techniques used for the purpose of the study include descriptive statistics, t-test for equality of means, and multiple regression analysis including ordered logistic regression.

The multiple regression here is cross section regression equation across 600 sample respondents. In case of cross section estimation on the other hand the problem of heteroskedasticity leads to the biased estimator. But the estimation should be robust. Then a robust estimator, or more precisely a heteroskedasticity-robust estimator, of the variance-covariance matrix of the estimator (VCE) of the OLS estimator of the Regression Model  $Y = X\beta + U$  is

$$\hat{V}_{robust}(\hat{\beta}) = (X'X)^{-1} \left( \frac{N}{N-K} \sum_i \hat{U}_i^2 x_i x_i' \right) (X'X)^{-1}$$

In STATA, a robust estimate of the VCE is obtained by using vce (robust) option of the regression command (Cameron and Trivedi, 2009).

Because of being a multiple regression model, the problem of multicollinearity has to be checked among independent variables. The Variance Inflation Factor (VIF) and tolerance are both widely used measures of the degree of multi-collinearity of the  $i$ th independent variable with the other independent variables in a regression model. Unfortunately, several rules of thumb – most commonly the rule of 10 – associated with VIF are regarded by many practitioners as a sign of severe or serious multi-collinearity (O'brien, 2007).

## 4. STATUS OF FINANCIAL LITERACY

### 4.1. District-wise Mean Financial Literacy

Table 2 reveals the district-wise financial literacy score of respondents. A very high mean financial literacy score in Kolkata is obtained as expected. However, interestingly Dakshin Dinajpur, a North Bengal district tops among the others in respect of financial literacy score. The other districts like North 24 Parganas, Barddhaman and Paschim Medinipur

**Table 2: District-wise mean financial literacy score and mean difference test**

District	No. of respondents	Mean Financial Literacy (On a scale of 1–21)	t statistic (mean difference significance test with the highest score)
Kolkata	59	18.25	-
Dakshin Dinajpur	22	14.94	5.620*
North 24 Parganas	130	14.84	8.267*
Barddhaman	101	14.82	10.801*
Paschim Medinipur	77	14.41	11.043*
South 24 Parganas	106	13.59	10.623*
Purba Medinipur	66	12.95	13.161*
Uttar Dinajpur	39	12.09	15.000*
Total	600	14.51	

\*indicates significance at 5% level

come very close in terms of the mean literacy score. The mean score of all the respondents taken together is 14.51 or 69.10% of the maximum score of 21. It is higher than the 2017 OECD calculated all India average score of 11.9 out of 22, the period of data collection being almost same. It is not only better than the all India average, but also better in comparison to the G-20 country average of 12.70 out of 22. The mean difference tests presented in Table 2 expose significant mean differences in the financial literacy score of the other 7 selected districts in the study with that of Kolkata district.

#### 4.2. t-Test for Equality of Means - Mean Financial Literacy Score According to Gender

Table 3 gives the results of the t-test for equality of means, whereby the negative t value indicates that the mean financial literacy score of the first group (female respondents) is significantly lower than the mean for the second group (male respondents). This is in conformity with previous research findings.

#### 4.3. t-test for Equality of Means - Mean Financial Literacy Score According to Domicile

Table 4 gives the results of the t-test for equality of means, whereby the negative t value indicates that the mean financial literacy score of the first group (rural respondents) is significantly lower than the mean for the second group (urban respondents).

### 5. DETERMINANTS OF FINANCIAL LITERACY: A MULTIPLE REGRESSION ANALYSIS

Table 5 shows the multiple regression model with financial literacy as the dependent variable. From the values of R<sup>2</sup> and Adj. R<sup>2</sup> it appears that the model is a good fit. We find that the adjusted R<sup>2</sup> of our model is 0.406 while R<sup>2</sup> is 0.412. This means that the linear regression explains 41.2% of the variance in the data. The F-test is highly significant (F = 69.329) and thus we can assume that the model explains a significant amount of the variance in financial

literacy and the regression model is a good fit of the data. In the significance column, it is seen that as many as four independent variables are statistically significant (P < 0.01). Thus gender, domicile, educational level and income band are found to be statistically significant at 1% level with financial literacy in their expected direction.

By comparing the standardized coefficients, we can see that income band (beta = 0.288) has the highest impact on financial literacy followed by education level (beta = 0.280), gender (beta = 0.236) and domicile (beta = 0.157). The collinearity statistics in the table below also allows us to check for multicollinearity in our multiple linear regression models. Tolerance is greater than 0.1 and VIF is less than 10 for all variables, thus indicating that there is no multicollinearity problem.

Thus the results signify that financial literacy of individuals is affected by relevant demographic and socio-economic factors. The relationship between these independent variables and financial literacy have been detailed below-

- The hypothesized relationship between gender and financial literacy is supported by the results of regression analysis. Female respondents appear to have significantly lower financial literacy compared to male respondents. This finding is consistent with the earlier research findings of various studies testing the relationship between gender and financial literacy.
- The results of regression analysis suggest that domicile is a significant factor in determining financial literacy. The level of financial literacy of respondents is therefore found to increase in the hypothesized direction from village to town, town to city and from city to large city.
- Education level is another independent variable that significantly influences the financial literacy of respondents. Financial literacy is lowest among respondents with no formal education and highest among those with professional qualification. In between these two extremes, financial literacy gradually increases in the hypothesized direction of education level from lowest to highest education level.

**Table 3: Group statistics and t-test for equality of means (Gender)**

	Domicile	n	Mean	Std. deviation	Std. error mean	
Financial literacy Score	Female	181	13.5287	4.09636	0.30448	
	Male	419	14.9383	3.17783	0.15525	
t-test						
t	df	Sig. (1-tailed)	Mean Diff.	Std. Error Diff.	95% confidence interval of the Diff.	
					Upper	Lower
-4.124	277.675	0.000	-1.40955	0.34177	-2.08235	-0.73675

**Table 4: Group statistics and t-test for equality of means (domicile)**

	Domicile	n	Mean	Std. deviation	Std. error mean	
Financial Literacy Score	Rural	209	13.0528	3.06350	0.21191	
	Urban	391	15.2936	3.52893	0.17847	
t-test						
t	df	Sig. (1-tailed)	Mean diff.	Std. error diff.	95% confidence interval of the Diff.	
					Upper	Lower
-8.088	479.144	0.000	-2.24078	0.27705	-2.78516	-1.69641

- Income band is another significant factor in explaining financial literacy of respondents. The financial literacy increases as expected with increase in the income band of sample respondents from the lowest monthly income band of less than ₹10000 to the highest monthly income band of more than ₹100000.

## 6. IMPACT OF FINANCIAL LITERACY ON HOUSEHOLD DECISION-MAKING

In this section the impact of financial literacy and relevant demographic and socio-economic variables on household financial decision making of individuals in matters related to saving decision,

investment decision, retirement planning, borrowing propensity and borrowing quality is analyzed. The analysis is done using ordered logistic regression since the dependent variables are ordinal variables.

### 6.1. Impact of Financial Literacy on Saving Decision

Table 6 exposes a statistically significant impact of financial literacy (excluding the savings score component), work situation and income band in their expected direction upon the probability of better savings decision of an individual.

### 6.2. Impact of Financial Literacy on Investment Decision

Table 7 exposes a statistically significant impact of financial literacy, education level, work situation and income band in their

**Table 5: Multiple regression to explain financial literacy across individuals**

R <sup>2</sup> =0.412 Number of observations=600						
Adj. R <sup>2</sup> =0.406						
F (6, 593)=76.24; Prob>F = 0.00; Prob>F = 0.0000						
Model	Coefficient (β)	Robust standard error	t	Sig.	Collinearity statistics	
					Tolerance	VIF
(Constant)	6.81	0.58	11.63	0.00		
Gender	1.82	0.27	6.80	0.00	1.14	0.88
Domicile	0.16	0.12	1.29	0.20	1.09	0.92
Age Band	0.58	0.14	4.07	0.00	1.48	0.67
Education Level	0.60	0.09	6.45	0.00	1.86	0.54
Work Situation	-0.20	0.32	-0.61	0.54	1.09	0.92
Income Band	0.77	0.12	6.23	0.00	2.01	0.50

a. Dependent Variable: Financial Literacy, \* indicates significance at 1% level

**Table 6: Ordered logistic regression (Dependent Variable: Saving decision)**

Ordered logistic regression Number of observations=600						
LR Chi-square (6)=198.35						
Prob.>Chi-square=0.0000						
Log likelihood=-528.43579 Pseudo R <sup>2</sup> =0.1580						
Savings decision	Coefficient	Std. Error	z	P>z	(95% confidence interval)	
Financial literacy less savings	0.196036	0.031249	6.27	0.000*	0.13479	0.257282
Gender	0.23253	0.194847	1.19	0.233	-0.14936	0.614423
Age band	0.014671	0.089875	0.16	0.870	-0.16148	0.190822
Education level	0.163916	0.068804	2.38	0.017	0.029062	0.29877
Work situation	1.092955	0.253162	4.32	0.000*	0.596767	1.589144
Income band	0.31189	0.088947	3.51	0.000*	0.137558	0.486223
/cut1	3.597814	0.503008			2.611936	4.583692
/cut2	6.044313	0.546141			4.973897	7.114729

\* indicates significance at 1% level

**Table 7: Ordered logistic regression (Dependent Variable: Investment decision making)**

Ordered logistic regression Number of observations=585						
LR Chi-square (5)=253.87						
Prob.>Chi-square=0.0000						
Log likelihood=-615.51518 Pseudo R <sup>2</sup> =0.1710						
Investment decision making	Coefficient	Std. Error	z	P>z	(95% confidence interval)	
Financial literacy	0.155586	0.029061	5.35	0.000*	0.098629	0.212544
Age band	0.094993	0.091300	1.04	0.298	-0.08395	0.273937
Education level	0.216547	0.068141	3.18	0.001*	0.082994	0.3501
Work situation	0.981766	0.248665	3.95	0.000*	0.494391	1.46914
Income band	0.589564	0.086251	6.84	0.000*	0.420515	0.758612
/cut1	4.245386	0.535211	3.196391	5.29438		
/cut2	7.124617	0.592526	5.963288	8.285946		
/cut3	8.517766	0.622306	7.298068	9.737464		

\* indicates significance at 1% level

expected direction upon the probability of riskier investment decision making.

### 6.3. Impact of Financial Literacy on Retirement Planning

Table 8 exposes a statistically significant impact of education level, work situation and retirement planning confidence in their expected direction upon the probability of better retirement planning.

### 6.4. Impact of Financial Literacy on Borrowing Propensity

Table 9 exposes a statistically significant impact of financial literacy in its expected direction upon the probability of better borrowing propensity of an individual.

### 6.5. Impact of Financial Literacy on Borrowing Quality

Table 10 exposes a statistically significant impact of financial literacy and income band in their hypothesized direction, upon the probability of better borrowing quality of an individual.

Respondents with higher income and higher financial literacy are expected to have a lower borrowing quality since they prefer credit cards, being considered qualitatively the lowest borrowing option among the alternatives. They prefer to take advantage of the credit period for any borrowing within the sanctioned limit of credit for which they need not pay any interest on their borrowing. Unsecured loan or even any secured loan, other than house-building loan, is not too popular among such respondents. House building loan is a little popular since it is linked with tax advantage apart

**Table 8: Ordered logistic regression (Dependent Variable: Retirement Planning)**

Ordered logistic regression Number of observations=600						
LR Chi-square (6)=83.03						
Prob>Chi-square=0.0000						
Log likelihood=-596.7245 Pseudo R <sup>2</sup> =0.0650						
Retirement Planning	Coefficient	Std. Error	z	P>z	(95% confidence interval)	
Financial literacy	0.038757	0.028107	1.38	0.168	-0.01633	0.093845
Retirement planning confidence	0.239535	0.122814	1.95	0.051**	-0.00118	0.480245
Age band (Retirement planning)	-0.12439	0.073908	-1.68	0.092	-0.26924	0.02047
Education level	0.250942	0.067096	3.74	0.000*	0.119435	0.382448
Work situation	0.793773	0.259918	3.05	0.002*	0.284342	1.303203
Income band	0.129323	0.085466	1.51	0.130	-0.03819	0.296834
/cut1	2.52056	0.444338			1.649674	3.391447
/cut2	3.980587	0.461152			3.076746	4.884429

\* indicates significance at 1% level, \*\* indicates significance at 5% level

**Table 9: Logistic regression (Dependent Variable: Borrowing Propensity)**

Ordered Logistic regression Number of observations=600						
LR Chi-square (3)=45.80						
Prob>Chi-square=0.0000						
Log likelihood=-382.47531 Pseudo R <sup>2</sup> =0.0565						
Borrowing Propensity	Coefficient	Std. Error	z	P>z	(95% confidence interval)	
Financial literacy	0.14	0.03	4.77	0.000*	0.083	0.199
Work situation	-0.50	0.26	-1.88	0.061	-1.013	0.022
Income band	0.09	0.08	1.11	0.269	-0.066	0.237
_cons	-1.45	0.43	-3.39	0.001	-2.291	-0.613

\*indicates significance at 1% level

**Table 10: Logistic regression (Dependent Variable: Borrowing Quality)**

Ordered Logistic regression Number of observations=411						
LR Chi-square (4)=74.44						
Prob>Chi-square=0.0000						
Log likelihood=-280.12676 Pseudo R <sup>2</sup> =0.1173						
Borrowing Quality	Coefficient	Std. Error	z	P>z	(95% confidence interval)	
Financial literacy	-0.102	0.023	-4.53	0.000	-0.146	-0.058
Age band (Borrowing)	0.015	0.070	0.22	0.830	-0.122	0.152
Work situation	0.160	0.219	0.73	0.466	-0.270	0.590
Income band	-0.209	0.059	-3.52	0.000	-0.325	-0.092
_cut 1	-2.309	0.362			-3.019	-1.598
_cut 2	-2.219	0.362			-2.928	-1.510

from housing being a basic need of urbanization. Car loan or two-wheeler loan may remain popular among the upper-middle class and middle class respectively. However, such loans have not been specifically enquired into because of not being within the scope of the standard questionnaire used for the purpose of the study.

## 7. CONCLUSION

The district of Kolkata has the highest mean financial literacy score among the districts selected for the purpose of the study. The respondents from Kolkata district, being residents of a large city, obviously score the highest in terms of financial literacy mainly due to their supremacy in terms of financial knowledge and financial behaviour in comparison to the people residing in other districts having a combination of rural and urban population.

Female financial literacy in general in the state has been found to be lower than the male financial literacy without any domicile factor being considered. However, it is ultimately found from the gender-level statistics that urban financial literacy is more than rural financial literacy irrespective of the gender factor. Higher income and education remain the other significant determinants.

Financial literacy is found to significantly affect most of the chosen variants of household decision-making in the study *viz.*, saving decision, investment decision, borrowing propensity and borrowing quality. The first three variants *viz.*, saving decision, investment decision and borrowing propensity are positively influenced by financial literacy while borrowing quality is negatively influenced since individuals with higher financial literacy prefer holding credit cards, a borrowing option although qualitatively very low among others. However financial literacy is not found to significantly impact retirement planning. Thus the hypothesis that financial literacy helps people to make informed financial decisions regarding saving, investing and borrowing is proven, signifying a greater role of financial literacy. Retirement planning, being a special type of investment decision can however be significantly influenced by work situation, education level and retirement planning confidence. Higher income is also expectedly found to positively influence two of the common household decisions like savings and investment and negatively influence borrowing quality. This is particularly in view of wealthy respondents preferring credit cards, being qualitatively the lowest among the borrowing alternatives. Propensity of borrowing is however not influenced by any demographic or socio-economic factor. Work situation is also seen influencing savings and investment significantly. Investment is however also influenced by education level.

After analysis of the findings, recommendations may be made in respect of further financial literacy drives with an integrated approach from all concerned. As earlier proposed, financial literacy for the rural and semi-urban areas as well as female financial literacy should remain more in focus. At present, the government is found more keen towards consumer awareness programmes. Investor awareness and financial literacy awareness drives could be planned jointly with these programmes.

Retirement planning should be encouraged among the people, not just keeping it confined to workplace pensions or interest income in a fluctuating market of fixed deposits. Private pension plans are coming now in larger numbers in the country with the withdrawal of government's role successively from pension payment in the organized sector.

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