

# **FINANCIAL LITERACY AND IT'S DETERMINANTS**

**(A Primary Survey Based Project)**

# **ACKNOWLEDGEMENT**

There are a lot of people who deserve to be thanked for the successful completion of our project – **Financial Literacy and It's Determinants**.

This project has been instrumental in giving us a firsthand experience of applying the knowledge and tools of economic analysis to the real world. We would like to convey our deepest gratitude to our project mentor Dr. Simontini Das, our project head Dr. Bidisha Chakraborty without whose guidance the project could not have been complete in its present form.

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# **ABSTRACT**

Financial literacy (or financial knowledge) is typically an input to model the need for financial education and explain variation in financial outcomes. Defining and appropriately measuring financial literacy is essential to understand educational impact as well as barriers to effective financial choice. The aim of this project is to measure the financial literacy level of the individuals belong to different income groups and different educational background. This is a primary survey based study, consisting 301 sample points. The major findings indicate that education is the most important driving factor of financial literacy. Since our survey has combined people from all income groups, we have seen that the middle class is surprisingly much more aware and financially literate. As income and socio economic status rises, the level of financial knowledge and literacy also rises but at the highest income class, it pales in comparison to the lower levels. It was also seen that as the number of family members rises, the financial literacy of the decision maker of the household increases as the increasing family responsibility makes the decision makers more concern about his financial planning. Finally we have seen that savings percentage is a crucial indicator of the financial literacy and financial planning ability of an individual or household.

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# **1.INTRODUCTION**

The financial literacy includes everyday financial issues like budgeting, spending, debt, taxes, retirement savings, college savings, mortgage management, and tax and estate planning.

Digging deeper, financial literacy can also include more esoteric themes, like investing, understanding how interest rates work, passive versus active income, and overall financial planning.

Financial literacy is mainly concerned with better planning of retirement life, gradual wealth accumulation and better financial decision making. So to be financially literate becomes important from the initial stages of one's career. But due to some personal or professional hindrances they become financially illiterate. This leaves them with incompetent knowledge about financial dealings, unacceptable decisions etc., so, they have to be enhanced with financial knowledge and tools which are needed to make informed decisions.

Financial literacy impacts the promotion of financial inclusion which ultimately results in financial stability of any economy. The present project intends to undertake a Kolkata based primary survey, consisting 300



individuals, across different income strata and educational strata. Based on the primary information, the project aims to calculate financial literacy index at individual level and to analyse the impact of various socio-economic factors on it.

## **2. OBJECTIVES**

The objectives of the present study are:

- i. To measure the level of financial literacy of the people
- ii. To analyse the impact of various socio-economic and demographic factors like age, gender, educational qualification, total family members, percentage of savings etc on the financial literacy level of the individuals.

# 3.REVIEW OF LITERATURE

Financial literacy is the mix of one's knowledge, skill and attitude towards financial matters. It helps to make informed decisions and well being of an individual. The subject matter of financial literacy deals with broad implications of a nation's economic well-being and it's augmentation.

Research has been conducted globally for measuring the level of financial literacy. And also financial literacy survey has been conducted at the country level by the governments.

Increased variety of financial products and the instability of the global economy in the twenty first century caused a massive increase in the complexities of financial decisions and also caused consumers to face the challenges in economic and financial activities. Financial Development is widely recognized as an important determinant in economic growth , with a large literature examining the determinants of the supply of banking and financial intermediation services.

There is ongoing discussion among researchers on the concept and definition of financial literacy. Financial literacy, financial education and financial knowledge often have been used interchangeably in academic

literature as well as in media. **Kozina&Ponikvar** (2015) defined financial literacy as components of human capital that is used in financial activities to increase an individual's financial wellbeing. According to **Mahdzan&Tabiani** (2013), financial literacy is basic skills and knowledge that individuals need in order to survive in a modern society. Additionally, **Krechovska**(2015) stated that the definition of financial literacy includes ability to secure personal income, capability to make decisions on expenditures, understanding consequences of personal decision on current and future income and orientation on the job market.

Therefore, there is no standard definition of financial literacy. Some studies include knowledge of financial literacy and others stated that that to be financially literate, people must be able to make informed financial decisions. Based on the most basic definition, financial literacy relates to a person's competency for managing money (**Remund**, 2010).

Some of the existing literature on this topic are :

- Regarding income **Atkinson and Messy(2012)** are associated with lower financial literacy levels. Atkinson and Messy in their paper "**Measuring Financial Literacy: Results of the OECD/International Network on Financial Education(INFE) Pilot Study**", *OECD Working Papers on Finance, Insurance and*

*Private Pensions*, No 15, OECD Publishing , Paris , mentioned that the overall pattern indicated that the respondents in the higher income household in each country were more likely to be financially literate.

- **Mitchell (2011)** provide experimental evidence to show that financial literacy is related to wealth in his paper " How **Financial Literacy Affects Household Wealth Accumulation**" published in *2012 AER Papers and Proceedings*.
- **Johnson and Sherraden (2007)** in their paper " **From Financial Literacy to Financial Capability Among Youth**" published in *The Journal of Sociology & Social Welfare* stated that minority and low income youth are less likely to have knowledge on mainstream financial systems lacking savings or current account , insurance , investments etc and employment based retirement savings.
- **Aizcorbe, Kennickell , Moore** in their paper " **Recent changes in U.S. Family Finances: Evidence from the 1998 and 2001 Survey of Consumer Finances**" mentioned that low income youth are more likely to come from families that are "unbanked" and therefore easy information and access.
- A study by **Gupta and Singh** titled " **Role of Literacy Level in Financial Inclusion in India : Empirical Evidence** " published in

*Journal of Economics , Business and Management , Vol.1 , No. 3 , August 2013* tries to assess the correlation between the usage dimension of Financial Inclusion Index and literacy level in India. It finds a large variation in the extent of correlation among different states of the country with a very low correlation at national level.

- **Sing (2014)** examines the impact of financial literacy among the low and moderate income individuals and the role of RBI for developing financial literacy for macroeconomic advantages of the economy. The research reveals that financial illiteracy is more in case of women , less educated , low income groups and ethnic minorities.
- Studies by **Marcolin and Abraham** (2006); **Schuchardt** et al (2008) ;**Remund** (2010) and **Hutson**(2010) found that " Despite the rapid growth of interest in and funding for financial literacy and financial education programs, it remains the case that the field of financial literacy has a major obstacle to overcome : the lack of a widely disseminated measure of financial literacy, developed through rigorous psychometric analyses".
- **Michael** (2009) argues that " A lack of financial literacy can hamper the ability of individuals to make well -informed financial decisions. For people who exhibit problems with financial decision making ,

financial advice has the potential to serve as a substitute for financial knowledge and capability".

- **AgarwallaSobhesh Kumar, Barua Samir, Jacob Joshy, Jayanth R. Varma** (2012) conducted a study among 3000 individuals, and found that financial knowledge among Indians is very low than the International standards. But the financial behaviour and attitude of the employees and retired seems to be positive. The financial knowledge among the women are marginally higher than the men. Greater access to consumption credits has influenced the financial behaviour of young employees.
- Financial literacy was examined among several individuals which showed that the financial literacy is low and lesser than one third of the young adult possess the basic knowledge of interest rates, inflation and risk diversification. Financial literacy was strongly related to socio demographic characteristics and family financial sophistication. Specifically, a college educated male whose parents had stocks and retirement savings was about 45 percentage points more likely to know about risk diversification than a female with less than a high school education whose parents were not wealthy (**Lusardi, Mitchell and Curto** 2006).

- **Ansong and Gyensare** (2012) conducted a study among 250 UG and PG University students of Cape Coast reveals that “ the age and work experience are positively related to Financial literacy. Also, mother’s education is positively correlated with respondents’ financial literacy. But, level of study, work location, father’s education, access to media and the source of education on money has no influence on financial literacy”.
- Responsibility of money management lies with parents. Parents are the source of financial information. They are confident about their financial future. Their parents are successful in money management and they take them to be their role models in deciding upon financial matters, as was found out by the **Canadian Institute of Chartered Accountants CICA Youth Financial Literacy Study 2011**.

Gender is the variable most often explored in an effort to explain differences in financial literacy.

- Research by **Anthes and Most**, 2000; **Applied Research & Consulting**, 2003; **Merrill Lynch Investment Managers**, 2005; **Worthington**, 2006; **Loibl and Hira**, 2006; **Mandell and Klein**, 2007; supports the proposition that gender is a significant factor in explaining the level of financial literacy. For example research



studies by **Chen and Volpe** (1996), **Goldsmith and Goldsmith** (1997) and by **Alexander, Jones and Nigro** (1998) tend to find that women are less knowledgeable than men about investments. In their study **Chen and Volpe** (1998; 2002) report that women are less knowledgeable than men in all the areas of financial knowledge that they test

- An additional variable that is found to be significant is the level of education attained (**Zhong and Xiao**, 1995; **Bodie and Crane**, 1997; **Waggle and Englis**, 2000; **Yao, Gutter, and Hanna**, 2005; **Dolvin and Templeton**, 2006).

The level of financial literacy required depends upon the financial needs and behaviour of an individual. From the above studies, it is inferred that financial literacy is highly influenced by age, region or country in which the individual resides, the financial environment which he experiences, the level of income, socio demographic factors like his family, number of dependents, mother's education, financial advice etc.

## **4.RESEARCH GAP**

To understand the relationship between financial knowledge and financial behaviours, it is important to understand how the financial literacy of people are related to the various socio-economic and demographic factors like age, gender , educational qualification , total family members and income class among other things. Overestimating one's financial knowledge can lead to risky financial behaviours and economic vulnerability. To date, limited empirical work has examined how the gap between one's perception of their financial own knowledge and their actual knowledge varies across life course. We analyze how financial literacy bears a correlation to the factors mentioned earlier.

## 5.PRIMARY DATA SOURCE

It was not possible for us to carry out a complete enumeration of our population. The primary data source comprised of individuals coming from all the income groups including lower middle and high income earning households, we have also taken into account of respondents coming from all gender in order to estimate financial literacy across gender groups. We had cooperated among ourselves to cover 20 respondents from middle income group, 15 from lower income groups and another 15 from higher income groups in order to get a wide range of respondents from all sections of the economy. So as already mentioned, we went in for convenience sampling. The sample was based on the respondents coming from both genders, from across different income groups and varied fields of study. While collecting the requisite information from the samples in consideration, we adopted the Questionnaire method.

Our overall sample size stands at 301, out of which 100 were collected through online survey and the rest by the conventional distribution of questionnaire. The final survey was carried out in January – March 2019.

We collected data from respondents from various income levels including the lower, middle and higher income groups, and all genders.

# 6.METHODOLOGY

- 1) Survey Design
- 2) Collection of Data
- 3) Designing the Questionnaire
- 4) Framework for Regression Analysis
- 5) Structure of Sampling
- 6) Stratified Snowball Sampling

## 6.1 SURVEY DESIGN

**Financial literacy** is the possession of the set of skills and knowledge that allows an individual to make informed and effective decisions with all of their **financial** resources. Our project aims at determining the extent to which the economy is financially literate and how well is financial inclusion taken into consideration across various income, age and gender groups. Through this survey, we aim to track the percentage of the economy that is able to save a part of their income as savings as well as invest, those that are able to only save and have no clue of investing, and those who are able to save very less to those who are completely unable to save or invest anything. Furthermore, we have focused on how the income level significantly affects the savings and financial decisions of various

households and all the other factors affecting the knowledge of financial literacy.

To achieve this, one of the foremost requirements was the collection of data on financial behaviour and financial attitude of individuals representing households across various income groups. This required a primary sample survey. The kind of sampling we followed for this project was convenience sampling. Convenience sampling is a non-probabilistic sampling technique where subjects are selected because of their convenient accessibility and proximity to the researcher.

Initially a pilot survey was conducted, comprising of a sample size of 10 students during the time period of November-December 2018. It was conducted to gauge the different sorts of questions and also to check whether the questions were properly understood by the respondents. Information was collected through personal interviews with the respondents.

The questionnaire was designed to collect data on the financial behaviour and financial attitude of the respondent, along with how much they were able to save and correspondingly invest, including the various factors affecting their level of savings and investment as well as the reason behind their savings and investments. Other information, such as their gender and income group was also enquired. We wanted to track down the households

who have been previously victimised of financial scams and how that has affected their financial inclusion via this survey. We have also brought into light, the characteristics that the individuals want to include in their concepts of personal financial literacy and planning. A copy of the questionnaire is included hereby.

During the pilot survey, we noticed that there were a few questions which required rephrasing as well as a few additional questions which needed to be asked in order for us to glean the specific information we desired. These issues were then suitably addressed. Online surveys were tried out and were especially successful due, we believe, to the demographic of the population under scrutiny. Response rates were very high and the method proved to be far less time consuming than the conventional distribution of questionnaire.

## **6.2 COLLECTION OF DATA**

It was not possible for us to carry out a complete enumeration of our population. So as already mentioned, we went in for convenience sampling. The sample was based on the respondents coming from both genders, from across different income groups and varied fields of study. While collecting the requisite information from the samples in consideration, we adopted the Questionnaire method.

Our overall sample size stands at 301, out of which 100 were collected through online survey and the rest by the conventional distribution of questionnaire. The final survey was carried out in January – March 2019.

We collected data from respondents from various income levels including the lower, middle and higher income groups, and all genders.

## **6.3 DESIGNING THE QUESTIONNAIRE**

At the outset, the questionnaire was divided into four segments:

### **a. Basic Information:**

Comprising of the respondent's gender, age, current level of education, family size, number of dependent members in the family, monthly family income, distance of residence from financial institution, times of visit in those financial institution, number of such institutions available in their area and whether they are enough or not. Given the usual reluctance of respondents in revealing exact income, we provided five income groups:

- 1) Below 2.5 lakh
- 2) 2.5 to 5 lakh
- 3) 5 to 7.5 lakh
- 4) 7.5 to 10 lakh
- 5) Above 10 lakh

And the applicable option had to be chosen.

These categories have been used subsequently to compare financial behaviour and attitude across income groups, thereby inferring whether it is significantly impacted by income. We have also compared it across the all genders to see if it plays an influential role in determining the respondent's financial literacy.

All of the subsequent sections comprise of statements to which the student can respond by choosing any one of 'agree', 'partly agree', or 'disagree'. In some cases, a 'Yes/No' question precedes a statement/series of statements with the purpose of making it easier for the respondent to choose the appropriate response.

#### **b. Financial Behaviour:**

This section is aimed at determining the level of the respondent's financial behaviour. To help in this endeavour, we have chosen questions/statements like whether the household has a budget or not, who is responsible for taking the financial decisions in the household, in the last 12 months, whether they have encountered a situation where in their income did not cover their living cost and if they did how did they meet their expenditures and various statements



to understand their behaviour or reaction towards financial decisions.

**c. Savings:**

This section is aimed at determining the level of the respondent's savings and investments. Several assertions are made in this section regarding the respondent's willingness and ability as well as to save and invest through corresponding questions and statements. We have also focused on the ways in which the individual prefers saving and investing or in fact is at all aware about the various ways.

**d. Financial Attitude:**

This section is meant to judge the level of the respondent's financial attitude with their Personal Circumstances. It comprises of several statements regarding his/her personal financial literacy and planning.

## **6.4 FRAMEWORK FOR REGRESSION ANALYSIS**

### **Construction of Financial Literacy Index**

The responses received from the questions in each of Sections 1(Basic information), 2(Financial behaviour), 3(Savings) and 4(Financial attitude) of the questionnaire are assigned values 4, 3, 2, 1 and 0 according as 'strongly agree', 'agree', 'neutral', 'disagree' and 'strongly disagree'.

**$Y(=FLI) = a + \beta_1 \text{ age} + \beta_2 \text{ gender} + \beta_3 \text{ total family members} + \beta_4 \text{ no. of dependent members} + \beta_5 \text{ educational qualification} + \beta_6 \text{ yearly income} + \beta_7 \text{ distance of nearest Bank} + \beta_8 \text{ no. of banks in locality} + \beta_9 \text{ are there enough banks} + \beta_{10} \text{ savings percentage}$**

Where the parameter: age, gender, total family members, number of dependent members, educational qualification, yearly income, distance of nearest bank, number of banks in locality and 'are there enough bank' are taken from section 1(Basic Information) and saving percentage is taken from section 3(savings).

### **Basic Assumptions of the Classical Linear Regression Model:**

1.  $u_i \sim (0, \sigma^2) \forall i$  the error term is identically normally distributed with mean 0 and standard deviation  $\sigma^2$ . This ensures homoscedasticity.

2.  $\text{Cov}(u_i, u_j) = 0 \forall i \neq j$  this implies there are no autocorrelation errors.

3.  $\text{Cov}(x_i, u_i) = 0 \forall i$  where  $x_i$  is an independent variable.

This regression is later carried out and its results discussed elaborately.

## **6.5 STRUCTURE OF SAMPLING**

### **Three factors that influence sample representative-ness**

- Sampling procedure
- Sample size
- Participation (response)

### **When might we sample the entire population?**

- When your population is very small
- When you have extensive resources
- When you don't expect a very high response

## **Types of sampling technique available to us:**

Researchers choose sampling techniques that they feel are most appropriate according to their study, based on theoretical and practical reasons.

Broadly speaking, we could choose to select our sample from (a) our sampling frame using either a probability sampling technique (e.g., simple random sampling, systematic random sampling, stratified random sampling) or (b) from our population using a non-probability sampling technique (e.g., quota sampling, purposive sampling, convenience sampling, snowball sampling). When explaining the types of sampling technique that were available to us in this part of our Sampling Strategy section, we should take into account: (a) the research strategy guiding our dissertation; and (b) theoretical and practical sampling issues.

- The research strategy guiding your dissertation

Theoretically, the ideal sampling technique for a piece of research (i.e., probability or non-probability sampling) differs depending on whether we are using a quantitative, qualitative or mixed methods research design.

- Theoretical and practical sampling issues

Whilst there are theoretical ideals when it comes to choosing a sampling technique to use for our dissertation (i.e., probability or non-probability sampling), it is often practical issues that determine not only whether we choose one type of sampling technique over

another (e.g., non-probability sampling over probability sampling), but also the specific technique that we use (e.g., purposive sampling over quota sampling; i.e., both are non-probability sampling techniques). Such practical issues range from whether our target population is known (i.e., whether we can get access to a list of the population) to whether we have the time and money to get access to such a list.

Types of sampling strategy available: probability and Non-probability sampling.

Ideal choice: probability sampling.

Preferred choice of probability sampling technique: stratified random sample.

Preferred choice of non-probability sampling technique: quota sample.

The sampling strategy we used:

The sampling strategy and sampling technique that we used in our survey research are Non-Probability Sampling and Stratified Snowball Sampling.

Non-probability sampling: Non-probability sampling represents a group of sampling techniques that help researchers to select units from a population that they are interested in studying. Collectively, these units form the sample that the researcher studies. A core characteristic of non-probability sampling techniques is that samples are selected based on the subjective judgement of the researcher, rather than random selection (i.e., probabilistic methods), which is the cornerstone of probability sampling techniques. Whereas some researchers may view non-probability sampling techniques as inferior to probability sampling techniques, there are strong theoretical and practical reasons for their use. In order to select a sample ( $n$ ) of respondents from our survey population, we could choose to use quota sampling, convenience sampling, purposive sampling, self-selection sampling and snowball sampling.

Snowball sampling: Snowball sampling is particularly appropriate when the population we are interested in is **hidden** and/or **hard-to-reach**. These

include populations such as drug addicts, homeless people, and individuals with AIDS/HIV, prostitutes, and so forth.

### **STRATIFIED SNOWBALL SAMPLING**

Snowball sampling is a type of non-probability sampling technique. Non-probability sampling focuses on sampling techniques that are based on the judgement of the researcher. This section explains:

- (a) How to create a snowball sample, and
- (b) The advantages and disadvantages (limitations) of snowball sampling.

#### **Creating snowball sampling:**

To create a snowball sample, there are **two steps**: (a) trying to identify one or more units in the desired population; and (b) using these units to find further units and so on until the sample size is met.

- Trying to identify one or more units in the desired population:

First, we need to try and find out one or more units from the population we are studying. Finding just a small number of individuals willing to identify themselves and take part in the research may be quite difficult, so the aim is to start with just one or two units.

- Using these units to find further units and so on until the sample size is met.

#### Advantages of Snowball Sampling

- The chain referral process allows the researcher to reach populations that are difficult to sample when using other sampling methods.
- The process is cheap, simple and cost-efficient.
- This sampling technique needs little planning and fewer workforce compared to other sampling techniques.

#### Disadvantages of Snowball Sampling

- The researcher has little control over the sampling method. The subjects that the researcher can obtain rely mainly on the previous subjects that were observed.
- Representativeness of the sample is not guaranteed. The researcher has no idea of the true distribution of the population and of the sample.
- Sampling bias is also a fear of researchers when using this sampling technique. Initial subjects tend to nominate people that they know well. Because of this, it is highly possible that the subjects share the same traits and characteristics, thus, it is possible that the sample that the researcher will obtain is only a small subgroup of the entire population.



# 7. DATA EXPLORATION

## 7.1. OVERVIEW OF THE SAMPLE

A total of 301 households were surveyed for this project.

The following are some diagrams which provide a brief outlook of distribution of sample units across different independent variables of the model for this project.

### a) Distribution of Sample units across age:

**Diagram 1: Distribution of sample units across age**

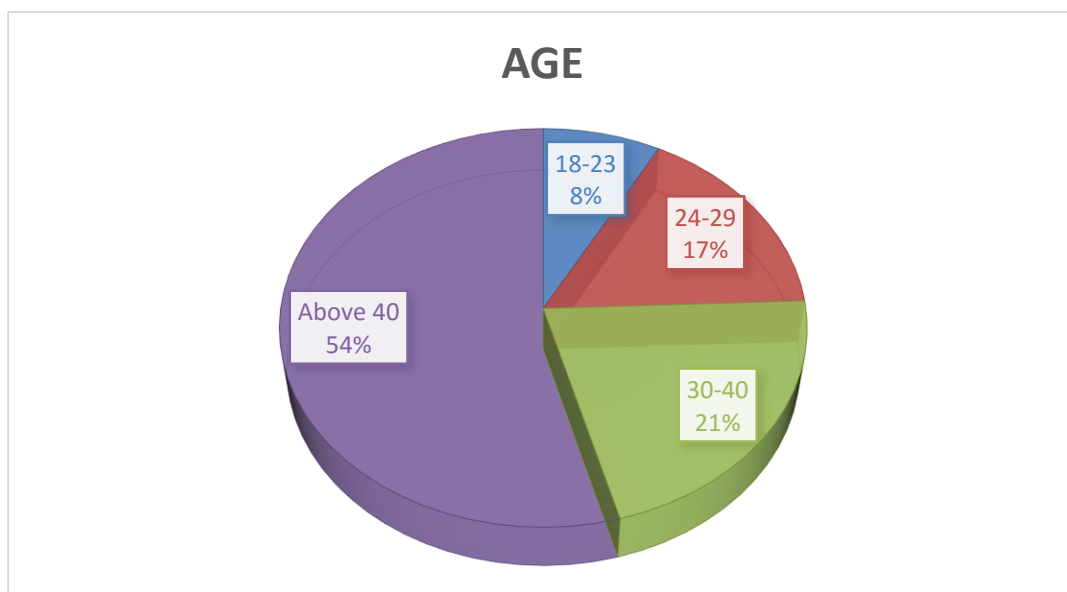


Diagram:1 shows, 26 of the respondents of our survey belong to the age group: 18-23, 54 of them belong to the age group: 24-29, 70 of them belong to the age group: 30-40 and 178 of them belong to the age group: above 70.

### **b) Distribution of Sample units across gender:**

**Diagram 2: Distribution of sample units across gender**

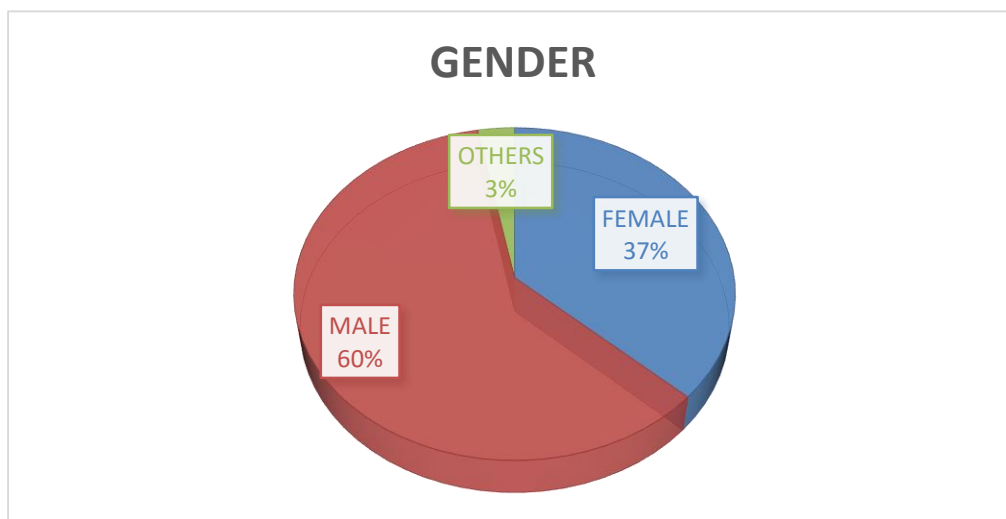


Diagram:2 shows, our survey comprised 112 female respondents, 183 male respondents and 9 others.

**c) Distribution of Sample units across educational qualifications:**

**Diagram 3: Distribution of sample units across educational qualification**

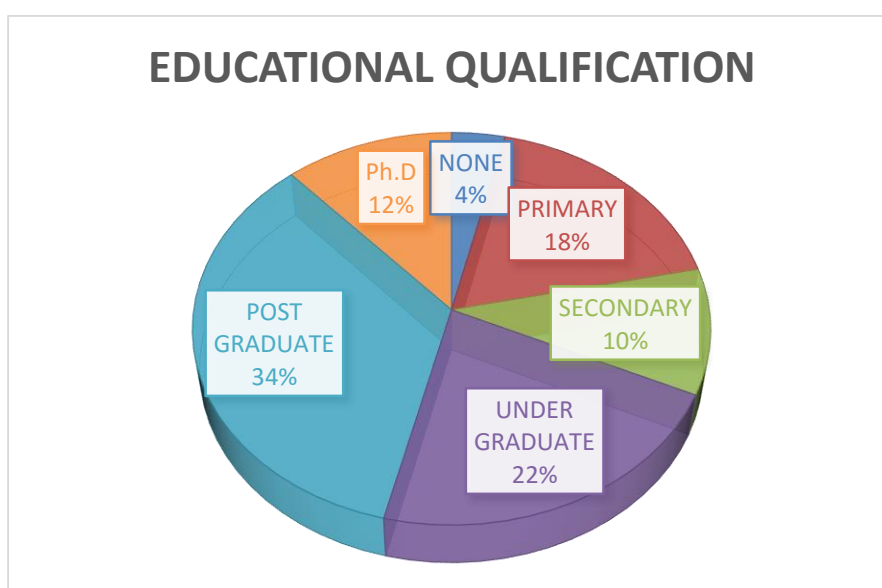


Diagram:3 shows, 11 of the respondents of our survey received no education, 54 of them have had primary education, 31 of them have had secondary education, 66 of them have studied till under graduate level, 104 of them have studied till post graduate level and 35 of them have a Ph.D.

**d) Distribution of Sample units across yearly income:**

**Diagram 4: Distribution of sample units across yearly income**

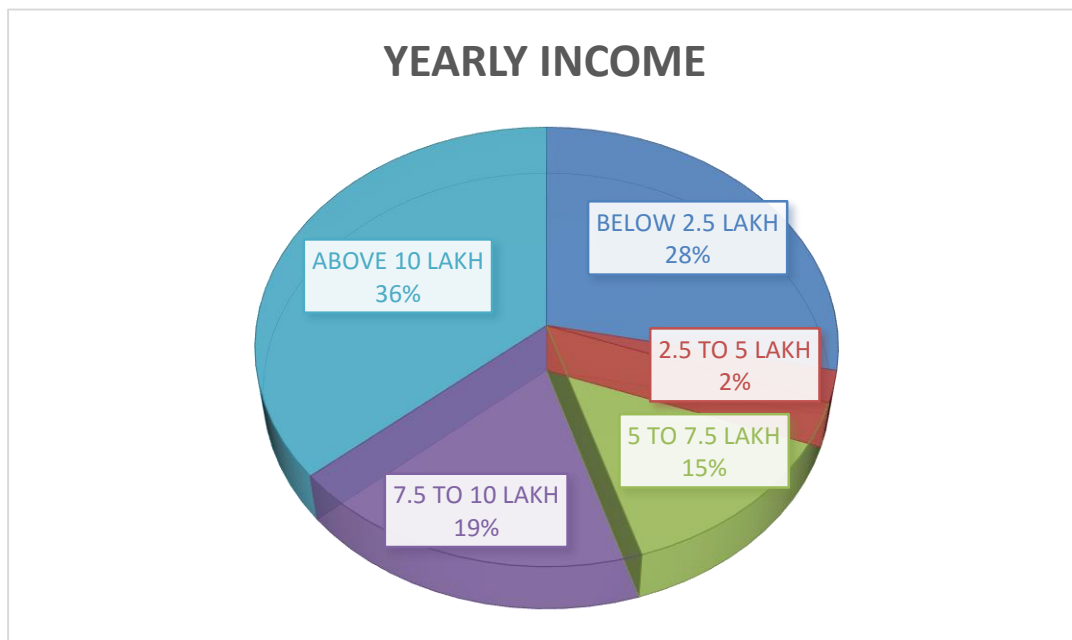


Diagram:4 shows, yearly income of 85 of the respondents of our survey is below 2.5 lakhs. Yearly income of 7 of them ranges between 2.5 to 5 lakhs. It ranges between 5 to 7.5 lakhs for 56 of them and for 109 of them it is above 10 lakhs.

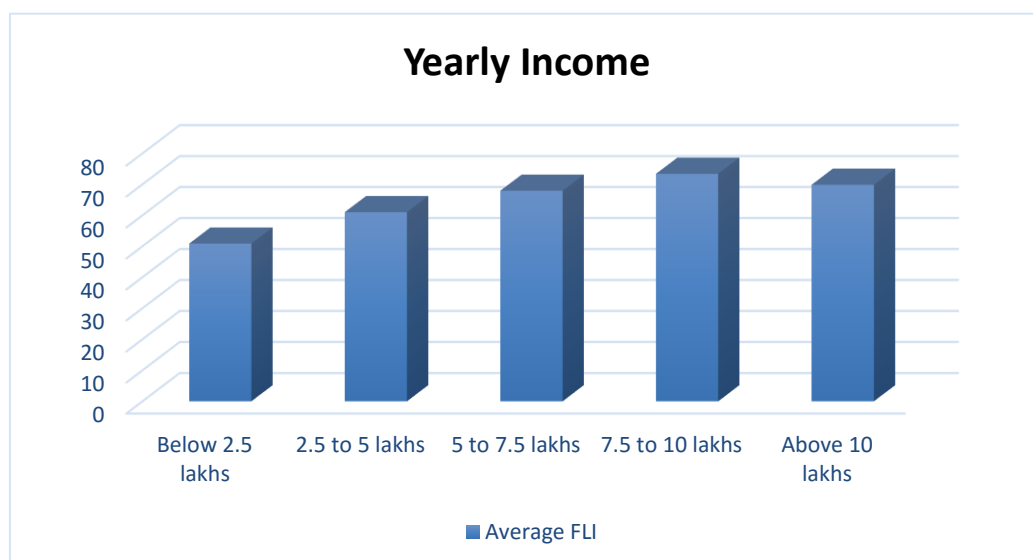
## 7.2. GRAPHICAL ANALYSIS

Financial Literacy is a combination of knowledge, attitude and behaviour so it would only be prudent to derive/evaluate Financial Literacy by combining all the three components. In order to assess overall levels of financial literacy, aggregate individual scores of each respondent has been calculated called the Financial Literacy Index (FLI). The minimum value has been recorded as 26 and maximum value as 96 from our survey.

The following graphs represent the changes in FLI with respect to the various independent variables:

### a) YEARLY INCOME/ INCOME PER ANNUM:

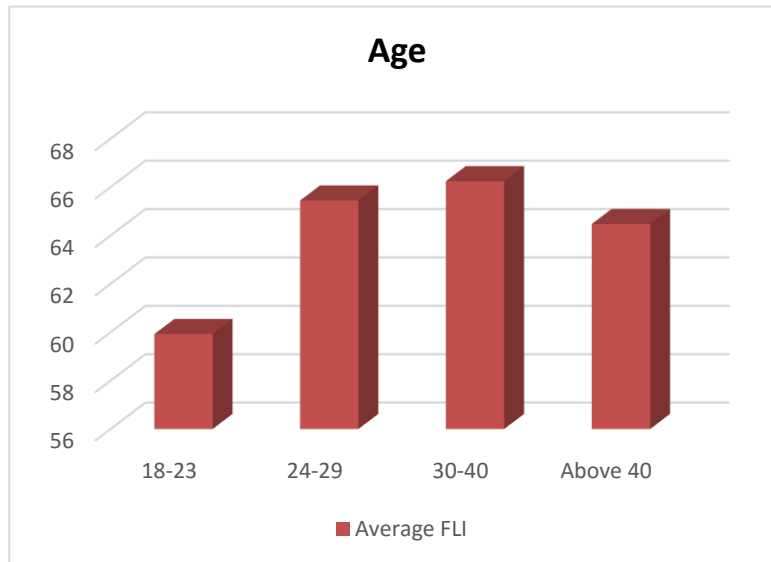
**Graph 1: Graphical analysis of yearly income/income per annum**



Graph:1 shows, average FLI increases from lower to higher income groups till the fourth group, then declines for the highest i.e. fifth income group.

b) AGE:

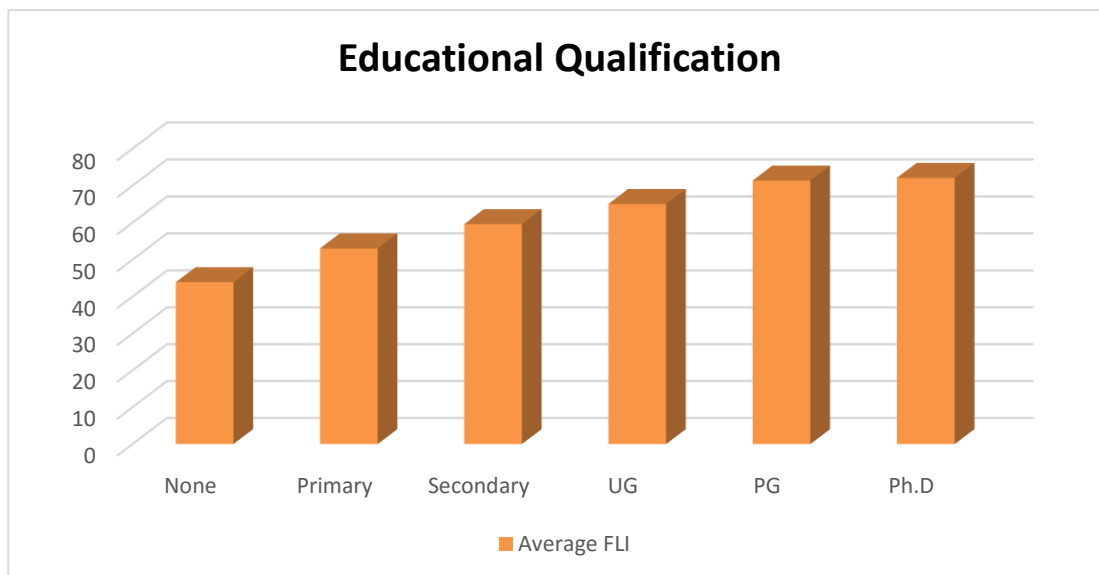
**Graph 2: Graphical analysis of age**



Graph:2 shows, average FLI is quite low for the lowest age group compared to the others. Average FLI increases till the third age group and then decreases for the last one.

c) EDUCATIONAL QUALIFICATION:

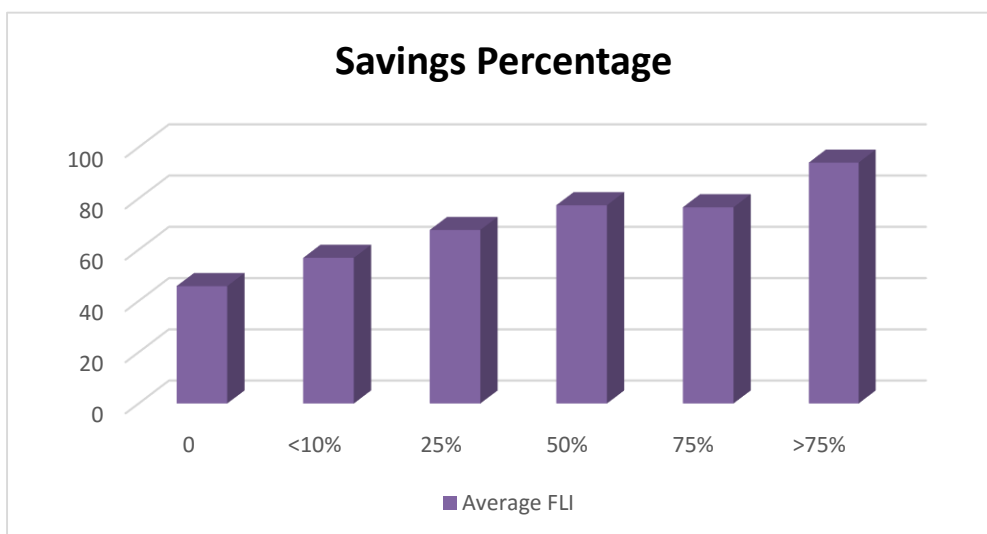
**Graph 3: Graphical analysis of education qualification**



Graph:3 shows, average FLI increases as level of educational qualification increases.

d) SAVINGS PERCENTAGE:

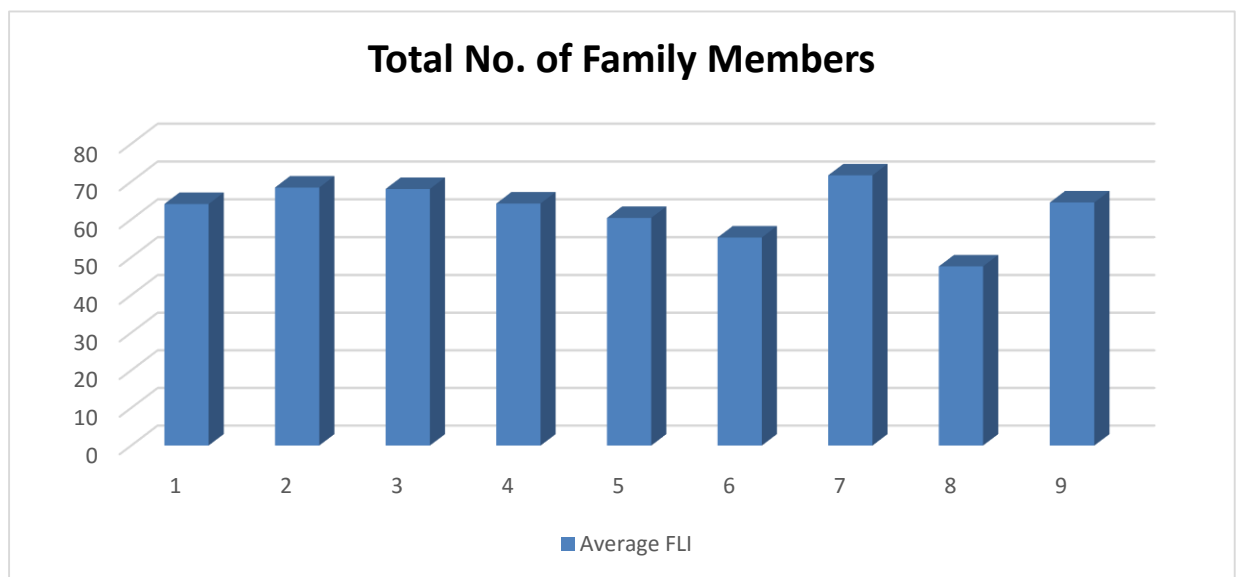
**Graph 4: Graphical analysis of savings percentage**



Graph:4 shows, as savings increases average FLI also increases till 50%, then decreases for the level 75% and increases again for >75%.

e) TOTAL NUMBER OF FAMILY MEMBERS:

**Graph 5: Graphical analysis of total number of family members**



Graph:5 shows, average FLI increases and decreases continuously as total number of family members increases.



## **7.3. STATISTICAL ANALYSIS**

### **SUMMARY STATISTICS OF THE DISTRIBUTION OF FLI AND THE INDEPENDENT VARIABLES**

**Table 1: Summary statistics of the distribution of FLI and the independent variables**

Variables	Observations	Mean	Standard Deviation	Min	Max
FLI	301	64.57807	12.96012	26	96
Age	301	3.328904	.959928	1	4
Gender	301	1.647841	.5185592	1	3
Total family members	301	3.727575	1.441829	1	9
Dependent members	301	2	1.171893	0	9
Educational qualification	301	3.006645	1.402363	0	5
Yearly income	301	3.322259	1.640875	1	5
Distance of nearest bank	298	1.680537	1.500244	.1	10
No. of banks in locality	296	2.922297	1.704643	0	13
Whether no. of banks is sufficient	295	1.813559	.4154571	1	3
Savings percentage	301	1.784053	.8924936	0	5

Source: Authors' calculation

Table:1 shows, the number of observations and the values of mean, standard deviation, minimum and maximum of the dependent variable(FLI) and independent variables of the model.

Now, we will analyse the average(mean) FLI across gender and income groups, respectively.

## **AVERAGE FLI ACROSS GENDERS**

**Table 2: Summary statistics of the distribution of average FLI across genders**

Gender	Average FLI
Female	63.9286
Male	64.9454
Others	65.5
All	64.57807

Source: Author's Calculation

Table:2 shows, average(mean) FLI is very close when compared across the genders as well as the entire sample. Thus gender substantially impacting FLI is unlikely at a glance

## **AVERAGE FLI ACROSS INCOME GROUPS**

**Table 3: Summary statistics of the distribution of average FLI across income groups**

Income groups	Average FLI
Below 2.5 lakh	50.8588
2.5 to 5 lakh	61
5 to 7.5 lakh	67.9318
7.5 to 10 lakh	73.3929
Above 10 lakh	69.8598

Source: Author's Calculation

Table:3 shows, average(mean) FLI varies quite significantly. Thus it seems that income will influence FLI in a significant manner. However, mean FLI increases gradually from the first income group till the fourth income group, but there is a sudden decline for the fifth income group.

# **8.EMPIRICAL ANALYSIS**

## **8.1 MAIN REGRESSION ANALYSIS**

**$Y(=FLI) = a + \beta_1 \text{ age} + \beta_2 \text{ gender} + \beta_3 \text{ total family members} + \beta_4 \text{ no. of dependent members} + \beta_5 \text{ educational qualification} + \beta_6 \text{ yearly income} + \beta_7 \text{ distance of nearest Bank} + \beta_8 \text{ no. of banks in locality} + \beta_9 \text{ are there enough banks} + \beta_{10} \text{ savings percentage}$**

## REGRESSION TABLE

**Table 4: Regression table**

SOURCE	SS	DF	MS
MODEL	24007.7039	10	2400.77039
RESIDUAL	20500.4594	283	72.4397858
TOTAL	44508.1633	293	151.904994

Source: Author's Calculation

**Table 5: Regression table**

NO. OF OBSERVATIONS	294
F (10, 283)	33.14
PROB>F	0.0000
R-SQUARED	0.5394
ADJUSTED R-SQUARED	0.5231
ROOT MSE	8.5112

Source: Author's Calculation

**Table 6: Coefficient and significance table**

FLI	COEF.	STD. ERR.	t	P> t	[95% CONFIDENCE INTERVAL]	
AGE	1.354563**	0.5569512	2.43	0.016	0.2582698	2.450855
GENDER	0.2539979	0.9633696	0.26	0.792	-1.642281	2.150277
TOTAL NO. OF FAMILY MEMBERS	1.360982***	0.4957246	2.75	0.006	0.3852069	2.336757
NO. OF DEPENDENT MEMBERS	-0.7784545	0.5612999	-1.39	0.167	-1.883307	0.326398
EDUCATIONAL QUALIFICATION	1.32166**	0.5960322	2.22	0.027	0.1484406	2.494879
YEARLY INCOME	2.380516***	0.4924181	4.83	0.00	1.411249	3.349783
DISTANCE OF NEAREST BANK	-0.5909869	0.3673868	-1.61	0.109	-1.314144	0.1321707
NO. OF BANKS IN YOUR LOCALITY	-0.1601861	0.3323463	-0.48	0.630	-0.8143704	0.4939983
DO YOU THINK THAT THE ABOVE-MENTIONED NO. IS SUFFICIENT	2.320079	1.450272	1.60	0.111	-0.5346112	5.174769
SAVINGS PERCENTAGE	5.195325***	0.667885	7.78	0.000	3.880672	6.509977
CONSTANT	32.61728***	3.923561	8.31	0.000	24.89422	40.34035

Source: Author's Calculation

[\*\* 5% level of significance

\*\*\* 1% level of significance]

## **8.2 COEF. and SIGNIFICANCE**

The coefficients describe the mathematical relationship between each **independent variable** (FLI) and the **dependent variable** (Age,

**Gender, Total family members, dependent members, yearly income, distance from nearest bank, number of banks in locality, do they think it is enough)** The p-values for the coefficients indicate whether these relationships are statistically significant. The p-value for each independent variable tests the null hypothesis that the variable has no correlation with the dependent variable. If there is no correlation, there is no association between the changes in the independent variable and the shifts in the dependent variable. In other words, there is insufficient evidence to conclude that there is effect at the population level.

The regression analysis shows that the coefficients of total number of family members, yearly income and percentage of saving are statistically significant at 1 percent level whereas coefficients of age, and educational qualification are statistically significant at 5 percent level. The rest other variables do not have any significant impact on individual financial literacy level.

Positive : as dependent variable  $\uparrow$  FL  $\uparrow$

Negative : as dependent variable  $\uparrow$  FL  $\downarrow$

Age : positive.    significant(**5% level**)

Gender : positive    not significant(**5% level**)

Total family numbers : positive    significant (**1% level**)

Dependent members :negative not significant (**5% level**)

Educational qualification : positive significant (**5% level**)

Yearly income : positive significant (**1% level**)

Distance of nearest bank :negative not significant (**5% level**)

Number of banks in locality :negativenot significant(**5 % level**)

Do you think the above mentioned : positive not significant (**5% level**)

Savings % : positive. Significant (**1% level**)

## **8.3 MODEL**

The F-test for overall significance has the following two hypotheses:

- **The null hypothesis** states that the model with no independent variables fits the data as well as your model.
- **The alternative hypothesis** says that your model fits the data better than the intercept-only model.

**F = 33.14**



**P value = 0.00 significant (reject null hypothesis : all dependent variables are 0) (1% level)**

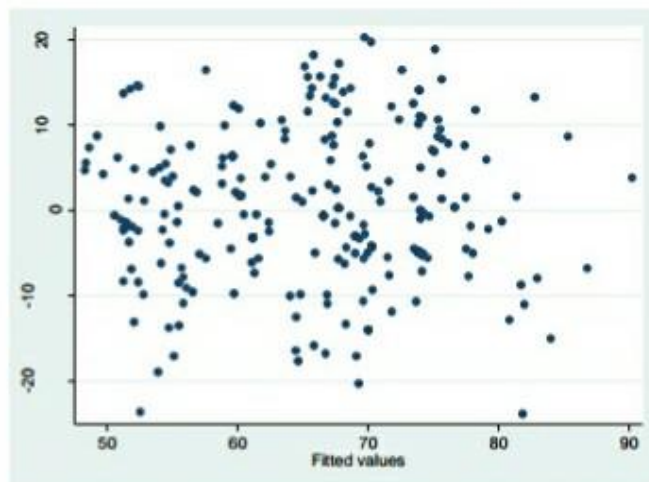
**R-squared = 0.5394**

**Moderate goodness of fit**

## **8.4 HETEROSKEDASTICITY**

### **TEST OF HETEROSCEDASTICITY**

Rvfplot



Heteroskedasticity in statistics, is when the standard errors of a variable, monitored over a specific amount of time, are non-constant.

If the p-value is (preferably) 0.05 or smaller, then the null hypothesis is rejected and there is significant evidence the thereis heteroskedasticity.

**P value = 0.0581 > 0.05 ( null hypothesis accepted, no heteroskedasticity)**

## **8.5MULTICOLLINEARITY**

**Table 7: Multicollinearity table**

VARIABLE	VIF	1/VIF
EDUCATIONAL QUALIFICATION	2.70	0.369848
YEARLY INCOME	2.61	0.383121
TOTAL NO. OF FAMILY MEMBERS	1.99	0.502986
NO. OF DEPENDENT MEMBERS	1.76	0.569295
DO YOU THINK THAT THE ABOVE-MENTIONED NO. IS SUFFICIENT	1.47	0.679167
SAVINGS PERCENTAGE	1.42	0.702524
NO. OF BANKS IN YOUR LOCALITY	1.28	0.781378
DISTANCE OF NEAREST BANK	1.24	0.805745
AGE	1.13	0.885713
GENDER	1.02	0.981803
MEAN VIF	1.66	

Source: Author's Calculation

Multicollinearity is a state of very high intercorrelations or inter-associations among the independent variables.

A variable whose VIF values are greater than 10 may merit further investigation. Tolerance, defined as  $1/VIF$ , is used to check on the degree of collinearity. A tolerance value lower than 0.1 is comparable to a VIF of 10. It means that the variable could be considered as a linear combination of other independent variables.

**None of the independent variables have a VIF of greater than 10 and hence  $1/VIF$  of less than 0.1.**

**No multicollinearity.**

## **8.6 PAIRWISE CORRELATION**

**Table 8: Pair wise correlation table**

F L I	A G E	F a m i l y	D E P O S I T S	E D U C A T I O N	Yearl y I n c o m e	Distanc e O f n e a r e s t b a n k	No. of b a n k s	Are t h e y e n o u g h	Savin g s %
-------------	-------------	----------------------------	--------------------------------------	---	--	---	------------------------------------	---	----------------------

<b><u>FLI</u></b>	+											
<b>Age</b>	+	+										
<b>Gender</b>	+	-	+									
<b>Total F.nos</b>	-	-	-	+								
<b>Total D.nos</b>	-	+	-	+	+							
<b>Edu</b>	+	-	+	-	-	+						
<b>Yearly Income</b>	+	-	+	-	-	+	+					
<b>Distance Of nearest bank</b>	-	-	+	+	+	-	-	+				
<b>No. Of banks</b>	+	+	+	+	-	+	+	-	+			
<b>Are they Enough</b>	+	+	+	-	-	+	+	-	+	+		
<b>Savings %</b>	+	-	+	-	-	+	+	-	+	+	+	

Source: Author's Calculation

## **8.7 REGRESSION ANALYSIS**

A) If we drop the variable 'do you think the number of banks in your locality are enough', the following is the result: -

$F = 38.43$

$R\text{-squared} = 0.5172$

This gives a lower Goodness of Fit.

$P\text{-value} = 0.000$

Age: positive.    significant

Gender: positive    not significant

Total family numbers: positive    significant

Dependent members: negative    not significant

Educational qualification: positive    significant

Yearly income: positive significant

Distance of nearest bank: negative not significant

Number of banks in locality: negative    not significant

Savings %: positive.    Significant

B) If we drop the variable 'number of banks in locality'

$$F = 40.78$$

$$R\text{-squared} = 0.5303$$

This gives a lower Goodness of Fit

$$p\text{-value} = 0.000$$

Age: positive.    significant

Gender: positive    not significant

Total family numbers: positive    significant

Dependent members: negative    not significant

Educational qualification: positive    significant

Yearly income: positive significant

Distance of nearest bank: negative not significant

Do you think the above mentioned: positive    not significant

Savings %: positive.    Significant

C) If we drop the variable 'distance from the bank'

$$F = 44.4$$

$$R\text{-squared} = 0.5194$$

This gives a lower Goodness of Fit

p-value = 0.000

Age: positive.    significant

Gender: positive    not significant

Total family numbers: positive    significant

Dependent members: negative    not significant

Educational qualification: positive    significant

Yearly income: positive significant

Distance of nearest bank: negative not significant

Number of banks in locality: negative    not significant

Do you think the above mentioned: positive    not significant

Savings %: positive.    Significant

## **9.RESULT**

The increased variety of financial products in the twenty first century caused increased complexity of financial decisions and increased challenges for economic and financial activities. An individual's ability to manage his personal finance has become a tricky issue with the increased diversity of the economic issues, specificity of the financial markets and regulations, and abundance of the financial products. Consequently, researches have registered a strong move to study and evaluate the financial literacy among household members.

In this context, the aim of this paper is to describe the financial literacy framework in which people behave in Kolkata. Do individuals belonging to different households, with different age, gender, education level and socio-economic background have the same financial literacy level and then the same financial behavior? We have concluded results to answer such questions on financial literacy.

**Following are the results derived from section 7 i.e. Data**

### **Exploration:**

From section 7.1 i.e. Overview of the Sample we get a brief idea about the sample that has been collected.



From section 7.2 i.e. Graphical Analysis we establish the relationship between the dependent variable FLI and some of the independent variables such as yearly income, age, educational qualification, savings percentage and total number of family members of the respondents. With the increase in income it has been observed that there is an increase in financial literacy, but for the highest income group financial literacy has slightly decreased compared to the previous income groups. The age group of 30-40 are leading in financial literacy when compared to other age groups. It has also been observed that financial literacy increases as the level of educational qualification increases. With the increase in savings percentage of the respondents the financial literacy increases, but after a certain level i.e. after 75%, financial literacy slightly decreases and then again rises; it is highest for the highest savings percentage. So we can conclude that the level of financial literacy fluctuates slightly as savings percentage increases. Financial literacy fluctuates continuously as the total number of family members increases.

From section 7.3 i.e. Statistical Analysis we observe that the minimum value of FLI has been recorded as 26 and maximum value as 96 and the mean FLI is 64.57807.

**We have formed a simple linear regression model where financial literacy depends on age, gender, socio economic status(income), number of family members, number of dependents, number of banks in locality and savings percentage.**

**We have found the following :-**

- **Financial Literacy increases with age**
- **Financial Literacy is independent of gender**
- **Higher number of family members leads to higher level of financial literacy of the family head. This may be due to the fact that higher family members put more responsibility on the family head thus making him/her gain more financial knowledge.**
- **Financial literacy does not depend on the number of dependent members.**
- **Higher education level leads to higher awareness (higher financial literacy) and in turn higher financial literacy.**
- **Higher level of income i.e. higher up the socio economic ladder implies higher financial literacy.**
- **Distance from the nearest bank, number of banks in locality do not have any significant impact on the degree of financial literacy.**

- **Higher savings percentage indicates greater awareness about financial matter and in turns higher financial literacy.**

# **10.SUMMARY AND CONCLUSION**

According to its literal definition, financial literacy is the ability to use skills and knowledge to take effective and informed money-management decisions. For a country like India, this plays a bigger role as it is considered an important adjunct to promotion of financial inclusion and ultimately financial stability.

In India, on one hand, there is a need to reach out to lower income groups and economically weaker sections, and on the other, to millennials who are hyper-connected and require tailor-made financial products but have limited awareness of the possible financial solutions. The middle aged population has taken the lead in terms of financial literacy.

Also findings indicate that education is the most important driving factor of financial literacy. Since our survey has combined people from all income groups, we have seen that the middle class is surprisingly much more aware and financially literate than expected. As income and socio economic status rises, the level of financial knowledge and literacy also rises but at the highest income class, it pales in comparison to the lower levels. It was also seen that as the number of family members rises, the

financial literacy of the decision maker of the household increases which makes him more aware about financial knowledge. Finally we have seen that savings percentage is a crucial indicator of the financial literacy and financial planning ability of an individual or household

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# **12.APPENDIX**

## **❖ QUESTIONNAIRE**

### **SURVEY ON FINANCIAL LITERACY AND INCLUSION**

#### **About Yourself**

1.Age

a.18-23 (1)

b.24-29 (2)

c.30-40 (3)

d.Above 40 (4)

2.Sex

a.Male (2)

b.Female (1)

c.Others (3)

3.Family Size.....

4.Number of dependent members in your family....

5.What is your education qualification?

a.Primary (1)

b.Secondary (2)

c.Under graduate (3)

d.Post graduate (4)

e.PHD (5)

f.N.A (6)

6.Which best describes your family's personal income per annum?

a.Below 2.5lakh (1)

b.2.5lakh to 5lakh (2)

c.5lakh to 7.5lakh (3)

d.7.5lakh to 10lakh (4)

e.Above 10lakh (5)

7.Distance of your residence from the nearest bank/other financial institutions that you use? (KM).....

8.How many times do you visit to the above mentioned financial institutions? (Monthly visit).....

9.Number of banks in your locality?.....

10.Do you think they are enough?

a.No (1)

b.Yes (2)

### **FINANCIAL BEHAVIOUR**

1.Does your household have a budget?

a.No (1)

b.Yes (2)

2.You is responsible for financial and monetary management in your household?

a.Yourself and other members (1)

b.Yourself and your spouse (2)

c.Yourself (3)

3.In last 12months have you encountered a situation wherein your income does not cover your living cost?

a.Yes (1)

b.No (2)

4.If yes in the previous question what do you do to meet your living cost?

a.Missed payment (1)

b.Borrowed from family member/relative (2)

c.Borrowed from employer (3)

d.Sold item (4)

e.Drew money out of savings/investment (5)

f.Availed loan/finance/mortgage (6)

g.Others (0)

5.Please rate – I set long term financial goals and strive to achieve them.

a.Strongly agree (4)

b.Agree (3)

c.Neutral (2)

d.Disagree (1)

e.Strongly disagree (0)

6.Please rate – I keep close personal watch on my financial affairs.

a.Strongly agree (4)

b.Agree (3)

c.Neutral (2)

d.Disagree (1)

e.Strongly disagree (0)

7.Please rate – I pay my bills on time.

a.Strongly agree (4)

b.Agree (3)

c.Neutral (2)

d.Disagree (1)

e.Strongly disagree (0)

8.Please rate – I only buy things which I can afford

a.Strongly agree (4)

b.Agree (3)

c.Neutral (2)

d.Disagree (1)

e.Strongly disagree (0)

## **SAVINGS**

1.Do you save?

a.Yes (2)

b.No (1)

2.What percentage of income do you save?

a.<10%(1)

b.25% (2)

c.50% (3)

d.75% (4)

e.>75% (5)

f.None (0)

3.About how often do you think of saving money?

a.Never (0)

b.Once a year or less (1)

c.Once a month (2)

d.Weekly (3)



e.Daily (4)

4.List the 3 best ways of saving money according to you.

a.First way to save money....

b.Second way to save money....

c.Third way to save money....

5."I feel that I am very good at saving money"

How strongly do you agree the statement?

a.Strongly disagree (0)

b.Disagree (1)

c.Neither agree nor disagree (2)

d.Agree (3)

e.Strongly agree (4)

6.In what forms are you likely to save money?

a.Saving account (1)

b.Retirement scheme (2)

c. Stock, bond, shares and mutual fund (4)

d. In cash (0)

e. Fixed deposit (3)

7. Do you lend money from local banks often?

a. Yes (1)

b. No (0)

8. Do you have sources other than the formal financial system for lending/saving money?

a. Yes (0)

b. No (1)

9. Do you invest?

a. Yes (1)

b. No (0)

10. Where do you invest your saving?

a.Savings a/c (1)

b.Shares,bond (4)

c.Gold (2)

d.Pension fund (3)

e.Real estate (5)

f.Others (1)

g.None (0)

11.While making savings and investment decision do you think?

a.You have very little information (1)

b.Incomplete information (2)

c.Too much information (3)

d.No information at all (0)

12.How do you manage your investment?

a.Self managed (1)

b.Managed by some other family member (0)

c.Through local bank (2)

d.Other financial advisor (3)

13.Please list the activities/reason for which you save.

a.Reason for future securing....

b.Reason for future saving....

### **FINANCIAL ATTITUDE**

1.Personal financial literacy can help you

a.Avoid being victimized by financial scams (2)

b.Buy the right kind of insurance to protect you from catastrophic risk (1)

c.Learn the right approach to invest for your future needs (3)

d.Lead a financially secure life through forming healthy spending habits  
(4)

e.Do all of the above (5)

2.Personal financial planning involves

a.Establishing a adequate financial record keeping (1)

b.Minimizing expenses (2)

c.Preparing plans for future financial needs and goals (3)

d.Both a and c (4)

e.All of these (5)

3.The most liquid asset is

a.Money in a fixed deposit account (4)

b.Money in a savings account (5)

c.A car (2)

d.A computer (3)

e.A house (1)

4.You are not overspending if

a.You issue cheques for more than what you have in your account (0)

b.Your monthly wages is Rs 3000 and you are spending 3500 (0)

c.You frequently receive calls from debtors (0)

d.Your monthly debt payment is 30% of your take home pay (1)

e.None of these

5.You tend to live for today and let tomorrow take care of itself

a.Strongly agree (0)

b.Agree (1)

c.Neutral (2)

d.Disagree (3)

e.Strongly disagree (4)

6.You find it more satisfying to spend money, than to save if for the long term

a.Strongly agree (0)

b.Agree (1)

c.Neutral (2)

d.Disagree (3)

e.Strongly disagree (4)