

Financial Literacy and Individual Investment Decisions - A Survey in Bengaluru City

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Abstract: Investment decision making is a very crucial process which is influenced by many factors. Important things which are necessary to understand the level of financial literacy which enables the degree to which an investor can able absorb the risk and maximize return. Hence, the present study has been undertaken to understand the level of financial literacy and the various others factors such as Demographical and Economic factors which influences individual investor's decision-making. To achieve this purpose, questionnaire was used as an instrument to gather primary data from the respondents using Random sampling technique. Total numbers of responses collected were 82. Factor analysis was applied to find out the major contributing components of demographical and economic factors.

Keywords: Financial decision making, financial literacy, Investment decisions, Risk and return. **JEL Classifications:** G12, G11, G110, G02.

1. Introduction

Financial literacy is an understanding of money and financial products that people can apply to financial choices in order to make informed decisions about how to handle their finances. Many individual nations have recognized the importance of financial literacy and created task forces to study their populations with the goal of offering education and outreach. Financial literacy is important because as the world becomes more and more complex with increasing financial products informed decision need to be made Greenspan (2001) a former chairman for the united states Federal Reserve Bureau maintain that as market forces continue to expand the range of providers of financial services, consumer will have much more choices and flexibility on how to manage their financial matters. According to OCED Financial literacy is defined as "A combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial wellbeing" [1]. Investment decision is defined as "Decision made by the investors or top level management with respect to the amount of funds to be deployed in the investment opportunities" [2].

2. Literature review

- Lusardi and Mitchell (2007b, p.36) used the definition of OECD (2005). Accordingly, financial education is defined as "the process by which financial consumers/investors improve their understanding of

financial products and concepts, and through information, instruction, and/ or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being". Servon and Kaestner (2008, p.273) defines financial literacy as "a person's ability to understand and make use of financial concepts" [3].

- Dr. J. Gajendra Naidu (2017) conducted a study on level of financial literacy in India through secondary data. The study states that improper financial decision is due to rapid growth of Indian economy and complex financial markets. Based on the sources collected the study states that the financial literacy of India is very low, as women and youngsters are struggling with their basic financial knowledge. The research suggested mending the level of literacy through new initiatives [4].
- Dr. Garima Baliya (2016) conducted a study on financial literacy among women in India. The study states the factors influencing the financial literacy among women, Government interventions and measures to be taken. The paper revealed the barriers and realisation of women towards importance of savings and investments. The research suggested for introduction of more programmes and institutions to improve the financial literacy level of woman [5].
- Bindhu P.K. (2013) explained that women investors are more familiar and have gained high financial literacy in compared to their male counter parts. Similarly, the study reveals that young investors in the age category of 25-35 years are more interested in investing in financial market products, than the adult investors in age grouping of 40 years and above [6].
- Samriti Kamboj (2014) conducted a study on Current scenario of financial literacy in India. The study states RBI's achieving objectives towards financial literacy and financial inclusion, NGO's and SHG's contribution towards financial education and financial literacy level of people. The research suggested strengthening financial education initiatives in India [7].

- Debabrata Jana, Abhijit Sinha and Arindam Gupta conducted a study on financial literacy at unorganised sector in Purba Medinipur district of West Bengal. The study states the level of financial literacy variation among the respondents was due to various demographic and socio-economic factors. The research suggested for implementation of necessary measures in India, to increase the awareness related to the financial matters [8].
- Lavanya Rekha Bahadur conducted a study on level of financial literacy in India. The study states that financial literacy is important economic growth, where financial education is taught and in turn we learn what 'Real India' is. India has a saving of GDP ratio of 33% which is the highest in the world. In an area of accelerating GDP literacy has become more critical than ever, so that we all reap the tangible benefits of the nation's economic property [9].
- Kamal Gupta & Jathindra Kaur conducted a study on level of financial literacy in India. The study states that organisation for economic cooperation and development demarcated financial literacy as a combination of financial awareness, knowledge, skills, attitude, and behaviour necessary to make sound decisions and ultimately achieve individual financial well-being. The study shows that micro entrepreneurs in district are low in financial skills. These are revealed by deficient record keeping practice, poor cash management, improper savings habits, and less awareness regarding different financial products and instruments [10].
- Divya Joseph conducted a study on level of financial literacy. India as a country have great diversity in its geography history and culture and population demography the sector presents a real challenges given its technological backwardness and mass illiteracy as people are still caught in ancient financial exclusion A framework of policy has emerged from an inclusion process of discussion. Initiatives and experimental services have been launched to put policy into effective cannot become complacent and become victims of our own success [11].
- P. K. Gupta conducted a study on level of financial literacy in India through secondary data sources. The study states that financial literacy is simple words is the knowledge about various financial products. It is considered to be an important tool to achieve financial inclusion growth. The main objective of this study is to measure literacy of respondents. The banking sector is undergoing major changes due to competition and the innovation of technology. It is an attempt to measure the level of finance literacy of the respondents and the study the impact of financial literacy on customer satisfaction towards banking sector [12].
- Kumar K. Senthil (2012) explained the influence of the financial literacy level on individual investment decisions. The impact of individual's personality traits on their investment decisions was also analyzed. The change in investment pattern of the individual if any between the various investment products was also studied. The survey was conducted in both rural and urban paces of Tiruchirappalli district. Findings suggest that except the gender, there was a relationship between the socio-economic factors and the level of financial literacy possessed by the respondents. The female respondents possessed low financial literacy compared to the male respondents. The rural respondents were behind the urban respondents in the level of financial literacy [13].

3. Research gap

Many Studies have been conducted on factors determining the various factors like demographic factors, psychological factors and socio-economic factors which influences Personal Investment Decisions and Financial literacy. From the above literature review it is evident that a few researches has been conducted on determining the influence of financial literacy on Investment Decisions hence the present study has been undertaken to study financial literacy and investment behavior.

A. Research methodology

This study is descriptive in nature. Descriptive research is an exploration of certain existing phenomenon. It is mostly done when a researcher wants to gain a better understanding of topic. Primary data is collected through a survey. The survey is carried out by means of self-administered, structured questionnaire and secondary data is collected from articles, research papers of various journals.

B. Statement of problem

The present study is attempts to analyze the level financial literacy and factors having impact on investment decisions; there are many factors that affect an investor decision making process like demographics, income level, qualification, financial knowledge and financial literacy. Many studies are supposed to be done on finding the factors that affects the ability to take risk and make investment decisions accordingly but here we will consider the influence of financial literacy and the other factors influencing investment decisions.

C. Scope of the study

The study was undertaken to assess the level of financial literacy among the investors, to study the impact of different demographic and economic factors on investment decisions and to study the variation between personal investment decisions of the investors of different financial literacy level. For this purpose, respondents from Bengaluru city were selected.

Table 1
Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	38	46.3	46.3	46.3
	FEMALE	44	53.7	53.7	100.0
	Total	82	100.0	100.0	

Table 2
Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	26	31.7	31.7	31.7
	25-30	24	29.3	29.3	61.0
	30-35	22	26.8	26.8	87.8
	40-45	7	8.5	8.5	96.3
	45 & ABOVE	3	3.7	3.7	100.0
Total		82	100.0	100.0	

Table 3
Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SECONDARY	1	1.2	1.2	1.2
	HIGHER SECONDARY	6	7.3	7.3	8.5
	GRADUATION	40	48.8	48.8	57.3
	POST GRADUATION & ABOVE	35	42.7	42.7	100.0
Total		82	100.0	100.0	

D. Objectives of the study

The main objective of the study is to measure the impact of financial literacy and financial awareness among the people. Keeping this in view, the following objectives are being set up:

- To understand the financial literacy level of individual investors in Bengaluru.
- To examine the investment pattern of individual investors.
- To study the various determinants of Financial Literacy.
- To build proposed financial literacy model
- To offer constructive finding and suggestions

E. Limitation of the study

The study on “financial literacy and individual investment decisions- a survey in Bengaluru city” has few limitations:

- The study is exclusive based on primary data as there may be chances of error.
- The study has been restricted to Bengaluru city.
- This study covers a limited segment of Investors.

4. Data analysis and interpretation

A. Demographical profile of the respondents

Inference: From the above table it is observed that out of the total 82 respondents, 38 (46.3%) were male respondents and 44 (53.7%) were female respondents.

Inference: From the above table it can be inferred that out of 82 respondents, 26 (31.7%) respondents are of the age group 18-25, 24 (29.3%) respondents are of the age group 25-30, 22 (26.8%) respondents are of the age group 30-35, 7(8.5%) respondents are of the age group 40-45 and 3(3.7%) respondents are of the age 45 & above.



Inference: From the above table it can be analyzed that out of 82 respondents, 40(48.8%) respondents were graduate, 35(42.7%) respondents are pursuing/completed post-

Table 4
 Descriptive statistics

	N	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
GENDER	82	.5017284	.252	-.149	.266	-2.028	.526
AGE	82	1.1032923	1.217	.598	.266	-.313	.526
EDUCATION	82	.6676822	.446	-.748	.266	.613	.526
OCCUPATION	82	1.1246466	1.265	.036	.266	-1.368	.526
AREA OF STUDY	82	.4520021	.204	.996	.266	-1.035	.526
FAMILY INCOME	82	.9636576	.929	-.564	.266	-.584	.526
FAMILY EXP	82	.9715154	.944	.178	.266	-.971	.526
INVESTMENT PREFERENCE	82	1.8557186	3.444	1.105	.266	.227	.526
HIGHEST RETURN	82	1.8557186	3.444	1.105	.266	.227	.526
CHANGE IN INVESTMENT PATTERN	82	.7702892	.593	-.911	.266	-.700	.526
PURPOSE INVESTMENT	82	.7260167	.527	-.898	.266	1.452	.526
INFLATION	82	.9077438	.824	2.378	.266	4.068	.526
INTEREST	82	.8429883	.711	2.394	.266	6.968	.526
INTEREST 2	82	.9040043	.817	.443	.266	-.627	.526
TIME VALUE OF MONEY	82	1.0689142	1.143	.159	.266	-1.265	.526
Valid N (listwise)	82						

graduation, 1 (1.2%) respondent has done his secondary education and, 22 (26.8%) and 6 (7.3%) respondents.

5. Factor analysis results

The Factor Analysis was applied for the identification of the core factors affecting the Investment Decisions. This technique was considered appropriate as it requires no preexisting of functional relationships and is a well-known for data reduction. It is used to reduce large number of variables into a few numbers of core factors.

A. Test adequacy of sample

The Kaiser-Meyer-Olkin is the measure of sampling adequacy, which varies between 0 and 1. The values closer to 1 are better and the value of 0.6 is the suggested minimum. The Bartlett's Test of Sphericity is the test for null hypothesis that the correlation matrix has an identity matrix. Taking this into consideration, these tests provide the minimum standard to proceed for Factor Analysis.

B. Test hypothesis regarding interrelationship between the variables

Table 5
 KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.623
Bartlett's Test of Sphericity	Approx. Chi-Square	442.128
	Df	105
	Sig.(p)	.000

Null Hypothesis H0: There is no statistically significant interrelationship between variables affecting the investment decisions. Alternate Hypothesis H1: There may be a statistically significant interrelationship between variables affecting the investment decisions.

C. Bartlett's test of Sphericity

Taking a 95% level of Significance, $\alpha = 0.05$

The p-value (Sig.) of $.000 < 0.05$, therefore the Factor Analysis is valid

As $p < \alpha$, we therefore reject the null hypothesis H0 and

accept the alternate hypothesis (H1) that there may be statistically significant interrelationship between variable. The Kaiser-Meyer Olkin (KMO) and Bartlett's Test measure of sampling adequacy was used to examine the appropriateness of Factor Analysis. The approximate of Chi-square is 442.128 with 105 degrees of freedom, which is significant at 0.05 Level of significance. The KMO statistic of 0.623 is also large (greater than 0.50). Hence Factor Analysis is considered as an appropriate technique for further analysis of the data.

D. Eigen values (select those components with eigen values ≥ 1)

The initial components are the numbers of the variables used in the Factor Analysis. However, not all the 15 variables will be retained. In the present research only the 5 factors will be extracted by combining the relevant variables. The Eigen values are the variances of the factors. The total column contains the Eigenvalue. The first factor will always account for the most variance and hence have the highest Eigen values. The next factor will account for as much of the left over variance as it can and the same will continue till the last factor. The percentage of variance represents the percent of total variance accounted by each factor and the cumulative percentage gives the cumulative percentage of variance account by the present and the preceding factors. In the present research the first 5 factors explain 65.668% of variance. The rotation sums of the squared loading represent the distribution of the variance after the Varimax rotation with Kaiser Normalization. The varimax rotation tries to maximize the variance of each of the factor.

On the basis of Varimax Rotation with Kaiser Normalization, 5 factors have been extracted. Each factor is constituted of all those variables that have factor loadings greater than 0.5. 15 variables were clubbed into 5 factors. 5 factors were extracted from the 15 variables used in the study. These 5 extracted factors influence Financial Literacy and Investment Decisions to an extent of 65.668% on. This explains over two-third of the variability.

Table 6
 Eigen value-total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.966	19.774	19.774	2.966	19.774	19.774	2.356	15.710	15.710
2	2.211	14.737	34.511	2.211	14.737	34.511	2.149	14.325	30.035
3	1.994	13.295	47.806	1.994	13.295	47.806	1.983	13.223	43.258
4	1.547	10.311	58.117	1.547	10.311	58.117	1.922	12.816	56.074
5	1.133	7.551	65.668	1.133	7.551	65.668	1.439	9.594	65.668
6	.982	6.545	72.213						
7	.823	5.490	77.703						
8	.810	5.399	83.101						
9	.614	4.093	87.195						
10	.546	3.643	90.837						
11	.421	2.804	93.641						
12	.397	2.647	96.288						
13	.308	2.051	98.339						
14	.193	1.288	99.628						
15	.056	.372	100.000						

Extraction Method: Principal Component Analysis.
 Extraction: SPSS Software

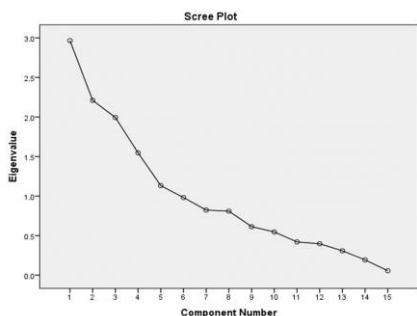
Table 7
 Rotated Component Matrix^a

	Component				
	1	2	3	4	5
GENDER	-.056	-.462	.155	-.354	-.521
AGE	.009	-.175	.281	.822	.025
EDUCATION	.751	.068	-.194	-.283	-.070
OCCUPATION	.040	.002	-.105	.827	-.031
AREAOFSTUDY	-.595	.035	.140	.038	-.215
FAMILYINCOME	.723	-.011	-.055	.377	-.173
FAMILYEXP	.807	.160	.093	.154	-.090
INVESTMENTPREFERENCE	.032	.950	-.048	-.085	.020
HIGHESTRETURN	-.005	.963	-.052	-.091	-.025
CHANGEININVESTMENTPATTERN	.423	-.143	-.289	-.030	.006
PURPOSEINVESTMENT	.017	.113	-.602	.319	.132
INFLATION	-.062	-.021	.092	-.050	.840
INTEREST1	.029	-.065	.634	-.080	.572
INTEREST2	-.230	.017	.706	.115	.157
TIMEVALUEOFMONEY	-.148	-.074	.664	.223	.007

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
 a. Rotation converged in 7 iterations.
 Extraction: SPSS Software

E. Screen plot

The screen plot graphs the Eigenvalue against each factor. We can see from the graph that after factor 5 there is a sharp change in the curvature of the screen plot. This shows that after factor 5 the total variance accounts for smaller and smaller amounts.



Extraction: SPSS Software

F. Identification of the core factors

The Rotated Factor Matrix represents the rotated factor loadings, which are the correlations between the variables and the factors. The factor column represents the rotated factors that have been extracted out of the total factor.

These are the core factors, which have been used as the final factor after data reduction. According to the grouping of the factors, each group of factors is named which will represent the grouped factor and represent the factors.

The above matrix gives the correlation of the variables with each of the extracted factors. Usually, each of the variables is highly loaded in one factor and less loaded towards the other factors. To identify the variables, included in each factor, the variable with the value maximum in each row is selected to be part of the respective factor. The values have been highlighted in each of the rows to group the 15 variables into 5 core factors.

Table 8
 Name of the five core factors

Factor	Variables Included	Name of the Factor
1	<ul style="list-style-type: none"> • EDUCATION • FAMILYINCOME • FAMILYEXP • CHANGEININVESTMENTPATTERN 	Factor 1
2	<ul style="list-style-type: none"> • INVESTMENTPREFERENCE • HIGHESTRETURN 	Factor 2
3	<ul style="list-style-type: none"> • GENDER • AREAOFSTUDY • INTEREST1 • INTEREST2 • TIMEVALUEOFMONEY 	Factor 3
4	<ul style="list-style-type: none"> • AGE • OCCUPATION • PURPOSEINVESTMENT 	Factor 4
5	<ul style="list-style-type: none"> • INFLATION 	Factor 5

Thus, after rotation, Factor 1 accounts for 15.710% of the variance; Factor 2 accounts for 14.325% of the variance; Factor 3 accounts for 13.223% of the variance; Factor 4 accounts for 12.816% of the variance and Factor 5 accounts for 9.594%. All the 5 factors together explain for 65.668% accounts for Financial Literacy and Investment Decisions.

6. Conclusions of factor analysis

The Factor Analysis has thus identified 5 core factors that affect Financial Literacy and Investment Decisions. They can be categorized as under: -

Factor 1

- EDUCATION
- FAMILYINCOME
- FAMILYEXP
- CHANGEININVESTMENTPATTERN

Factor 2

- INVESTMENTPREFERENCE
- HIGHESTRETURN

Factor 3

- GENDER
- AREAOFSTUDY
- INTEREST1
- INTEREST2
- TIMEVALUEOFMONEY

Factor 4

- AGE
- OCCUPATION
- PURPOSEINVESTMENT

Factor 5

- INFLATION

The above factors have been discussed in detail as under: -

- *Factor 1* – Demographical Factors, Economical Factors and Investment Pattern.

This factor suggests Education, Family Income; Family Expenses will have significant contribution on the Investment Pattern of the Individual. The first factor explains 15.710% of the variability on the

Financial Literacy and Investment Decisions. Hence, it is necessary for the Individual to have a good education, sufficient income which significantly contributes to Investment decisions.

- *Factor 2* – Investment Preference and Return

The second factor relates to the Investment preference and Return. This factor explains 14.325% of the variability on the Financial Literacy and Investment. If investors prefer riskier investment they expect more return and vice versa.

- *Factor 3* – Gender and Financial Literacy

The third factor characterizes Gender will have a greater significant on financial literacy of an Individual and their by enhancing the Individual financial well-being. This factor explains 13.223% of the variability on the Financial Literacy.

- *Factor 4* – Socio economic Factors and Purpose of Investment

The fourth factor characterizes the socio economic factors and purpose of Investment. This factor explains 12.816% of the variability on the purpose of Investment is decided by age and Occupation.

- *Factor 5*– Financial Literacy

The fifth factor characterizes awareness about Inflation rate and its significant contribution to Financial Literacy. This Factor explains 9.594% contribution to Financial Literacy.

A total of 5 core factors extracted from the 15 variables, explains 65.668% on Financial Literacy and Investment Decisions.

7. Conclusion

From the analysis it may be concluded that out female respondents have more financial literacy compared to male respondents i.e.59%, it also evident that respondent educational qualification contributes in a significant way to financial literacy, it is also observed that housewife are more financial literate as compared to other respondents i.e. 53%. Investment Decisions are significantly influenced by education, Family

Table 9
 Identification of variables related factors in variables selection

Factor	Variables Included	Name of the Factor
Factor 1	• EDUCATION	.751
	• FAMILYINCOME	.723
	• FAMILYEXP	.807
	• CHANGEININVESTMENTPATTERN	.423
Factor 2	• INVESTMENTPREFERENCE	.950
	• HIGHESTRETURN	.963
Factor 3	• GENDER	.155
	• AREAOFSTUDY	.140
	• INTEREST1	.634
	• INTEREST2	.706
	• TIMEVALUEOFMONEY	.664
Factor 4	• AGE	.822
	• OCCUPATION	.827
	• PURPOSEINVESTMENT	.319
Factor 5	• INFLATION	.840

Income, Investment preference, Risk & return and Financial Literacy.

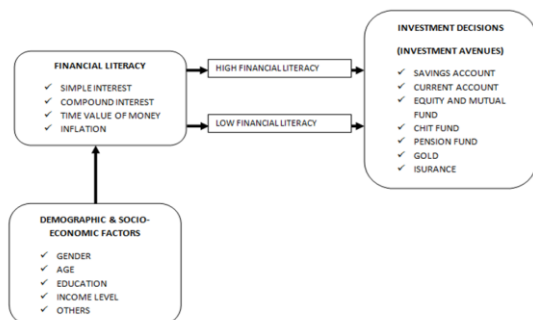


Fig. 1. A proposed model of financial literacy (Sources: Author's Proposed Determinant's model of Financial Literacy)

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