

A STUDY ON THE INFLUENCE OF FINANCIAL LITERACY ON INDIVIDUAL SAVINGS BEHAVIOR

M. V. Subha* and P. Shanmugha Priya**

***Abstract:** This study examines the influence of financial literacy on individual saving in the context of an emerging market, India. A survey was conducted 200 salaried employees of IT/ITES Services Other determinants of individual saving were also examined, in particular, saving regularity, risk-taking behaviour, and socio-demographic characteristics. Results of a multiple regression revealed that the level of financial literacy had a significant, positive impact on individual saving. In addition, saving regularity, gender, income and educational level influenced the probability of saving positively. Results of this study suggest that it is important for policymakers to increase financial literacy of individuals by implementing various financial education programmes, to further influence saving rates at the national level.*

***Keywords:** Financial literacy, Savings, Individuals.*

1. INTRODUCTION

Amidst current evolutions in financial markets, it now becomes increasingly necessary for consumers to be more knowledgeable and competent in administering their finances. This is because changes in financial markets have resulted in the availability of a wider selection of financial products and services, making financial decisions multifaceted and more complicated. Easier access to credit cards, deregulation of financial markets, and technological improvements in the way financial services are distributed have undoubtedly left many consumers with a confusing array of investing opportunities and decisions to be made (Consumer and Financial Literacy Taskforce, 2004).

The literature suggests that there is a strong relationship between financial literacy and household welfare. Studies indicate that households with less financial knowledge or literacy, tend not to plan for their retirement (Lusardi, Mitchell, 2007a), receive lower asset levels (Lusardi, Mitchell, 2007a), and usually borrow at higher interest rates (Stango, Zinman, 2006). These results have convinced policy makers in both, developed and developing countries to increase efforts in advancing financial education, so they can increase household saving and participation in

* Associate Professor, Anna University Regional center, Coimbatore, E-mail: subhamv@gmail.com

** Assistant Professor, Happy Valley Business School, Coimbatore, E-mail: shanmu.hvbs@gmail.com

financial markets, to improve well-being and reduce poverty ultimately. Increasing financial literacy and capability promotes better financial decision-making, thus, enabling better planning and management of life events such as education, illness, housing purchase, or retirement.

At the macroeconomic level, individual saving benefits the entire nation. Saving has a positive impact on the economy as a whole because funds that are placed in financial assets are then channeled through financial intermediaries to fund investments by firms. Subsequently, investments by firms will ultimately benefit the nation through higher productivity and economic growth. Furthermore, high savings can also hedge countries against economic downturns and financial crisis.

One of the avenues to boost national saving is by encouraging individuals to increase personal saving. This can be achieved by implementing financial educational programmes to increase individuals' financial literacy, i.e. to heighten understanding of their own financial circumstances, enable them to make financial plans for the future, and choose the most appropriate financial instrument that will help them achieve their financial goals.

The objective of this paper is to examine the relationship between financial literacy and individual saving. It is posited that higher levels of financial literacy have a positive impact on saving amongst individuals, because increased literacy implies that individuals who have better understanding of their financial circumstances, would be able to plan their future finances better, hence make more informed financial decisions. Since there are not many known research investigating the relationship between these factors in the context of an emerging market, this study can be regarded an exploratory study.

2. LITERATURE REVIEW

2.1. Financial Literacy

Financial literacy can be defined as the ways how people manage their money in terms of insuring, investing, saving and budgeting (Hogarth, 2002). Financial capability, or literacy, is determined by experience, expertise and person's needs, and can have a positive impact on consumers' personal involvement in financial markets and services. Schagen, Lines (1996) defined financial literacy as "the ability to make informed judgments and to take effective decisions regarding the use and management of money", while Roy Morgan Research (1993, p.16) defined the terms as "being knowledgeable and assured in the areas of saving and spending, budgeting and the measures of financial literacy should show the individual circumstances. The knowledge should only be tested against an individual's needs and circumstances rather than against the entire array of financial products and services, some of which they will neither use nor need".

Researchers assert that financially literate people would know how to manage their money, understand how financial institutions work, and possess a range of analytical skills. Furthermore, they would know how they should handle their financial affairs and how to be responsible financially (Beal, Delpachtra, 2003). In some studies, financial literacy has been described as the understanding and knowledge of basic financial concepts, and the ability to use them to plan and manage their financial decisions (Hogarth, 2002).

Various types of surveys have been conducted to measure the degree and spread of financial literacy. Results of a study by Lusardi, Mitchell (2007a), for example, show that people with a low level of education, females, African-Americans and Hispanics, demonstrate low levels of financial literacy, which subsequently affect financial decision-making. Results of the study found that these groups of respondents fail to plan properly for their retirement period, have less participation in the stock market, and have poor borrowing behaviour, possibly due to lack of knowledge in basic financial concepts (Lusardi, Mitchell, 2007a).

A popular survey on financial literacy is the Jump\$tart Coalition in the US, which measures individual personal capability amongst high school students (Jumpstart Coalition Survey, 2008). Four different types of questions were asked in the survey, specifically, in the area of spending and credit; saving and spending; money management; and income. The survey also includes questions regarding investments in stocks, bonds, and insurance. According to Mandell (2003), "the survey demonstrates that graduating high school seniors continue to struggle with financial literacy basics". Because the tests are conducted upon graduation of senior high school students, it shows the maximum degree of financial literacy among schooling adolescents (Hogarth, 2002). From a series of the survey, it can be noted that the measured degree of financial literacy has declined since first survey which was conducted in 1998.

In the UK, a study conducted on financial literacy for NatWest Group Charitable Trust focused on people renting government-owned houses, young generation, single parents and students. Questions of the survey asked about money management, saving and buying attitudes and their confidence in facing with money issues. Moreover, they asked about financial decision making, financial instruments and markets (Schagen, Lines, 1996). The study found that single parents have less confidence in dealing with their financial problems, but the majority had good confidence level. A study conducted on financial literacy of Malaysian degree students explored student's background, financial attitude and knowledge Ibrahim, Harun, MohamedIsa, 2009). The study found that most of students required more proper practice on money management skills.

Chen and Volpe (1998) examined financial literacy amongst more than 900 students in 14 American universities. By linking the scores to individuals'

socioeconomic and demographic attributes, results showed that young females with non-business majors and little work experience have very low degrees of financial literacy. They also concluded that income and race were not important factors in determining financial literacy. Meanwhile, in the survey of an Australian regional university, most of the participating students scored fairly well for financial literacy and knowledge. Business students, in particular, scored better in comparison with other majors (Beal, Delpachtra, 2003).

2.2. Saving Behaviour of Individuals

As previously discussed, saving benefits not only households but also the entire nation as it provides the base for long-term investments and infrastructure development for every country that contribute towards economic growth. Saving also acts as a hedge for nations against economic downturns and financial crisis.

Is a high level of saving advantageous or disadvantageous for an economy? Some may argue that high levels of saving reflect societies that are not spending, hence not contributing towards boosting national aggregate demand and economic growth. However, in a study of the Malaysian economy, Tang, Chuna (2009) assert that high levels of saving indicate an economy that is in good condition. They argue that policies which support saving should be performed because saving is a source of economic development through its effect on capital structure. Thus, high saving rates display the meaning of a 'boosting economy', rather than a 'freezing economy' (Tang, Chua, 2009).

The life-cycle saving theory (Modigliani, Brumberg, 1954) posits that individuals will follow a hump-shaped saving pattern over their lifetime. During high earning periods of employment, individuals will save increasing amounts and smooth out expenditure. During low income levels (for instance, prior to employment earning periods, and later, during retirement), people will use up their savings to fund their lifetime spending needs.

Some of the studies conducted in the US show that financial behaviour and the level of saving are significantly different between genders. Since women generally have lower earnings, they tend to have a lower level of saving and wealth, as opposed to men. Women also face more difficulty in their retirement period because they spend five years more in retirement due to longer life expectancies, as opposed to men (Gottschalck, 2008).

Schmidt, Sevak (2006) suggest that women in the US have historically been dependent on men for financial security. Although this trend is changing, there are still large differences in economic well-being that influence all women of different age groups (Levine, Mitchell, Moore, 2000). The authors found that there are large gender gaps in current and planned retirement income. In general, there is a sizeable gap between the two genders in income resources like saving, pensions,

and after-retirement earnings. Moreover, the poverty rates were significantly higher amongst women in most developed countries (Burnes, Schultz, 2000).

Other studies also showed that saving behaviour has a significant gender gap (Embrey, Fox, 1997; Yuh, Hanna, 1997). Women were found to be less likely to have a defined retirement saving plan compared to men (Sunden, Surrrette, 1998), although other studies showed contradictory results (Agnew, 2006). Thus, it is not really clear whether women are more likely to spend more than their income.

The concept of risk aversion is related to financial decision making. Croson, Gneezy (2004) show that there is a significant difference in risk-taking between men and women, such that women are more risk-averse compared to men. The authors show that, in general, males are more risk-taking when they want to attract their future partner, and females are more risk-averse in their child-bearing periods (Croson, Gneezy, 2004). However, while the psychology literature indicates a significant difference in risk tolerance between different genders, research in the area of finance and economics showed that there is no gender difference in the investment behaviour (Zhong, Xiao, 1995), hence implying insignificant variations in risk-taking attitudes between genders.

Lusardi, Mitchell (2007) showed that women were usually less financially informed than men, and financial literacy was found to influence the level of saving. Researchers have shown that male and female have different risk preferences, which influence the saving and spending decisions they make (Croson, Gneezy, 2004), but there is not much information about how saving behaviours differ between males and females.

2.3. The Relationship between Financial Literacy and Saving

Lusardi, Mitchell (2007b) examined how financial literacy impacts people's preparedness for their retirement. Using data of elderly individuals from the Health and Retirement Survey in the US, the authors investigate whether financially literate people are more likely to plan for retirement, and whether planning have an impact on retirement wealth. Results of the study found that financial literacy increases the likelihood of planning for retirement and that people who plan for retirement have higher levels of wealth compared to people who do not plan. They show that financial literacy, by its significant effect on planning, indirectly impacts household saving behaviour.

Research has shown that people with higher knowledge of finance are more capable of preparing themselves for retirement through better saving and insurance plans. Meanwhile, Clark and Madeleine (2008) showed that financial knowledge and saving programs can be very effective in overcoming the decrease in saving. However, the exact process that shows how learning changes the level of saving and investment decisions is not clear (Maki, 2004).

3. METHODOLOGY

3.1. Sampling Design

The context of this study is individuals, and employs a convenience sampling method since it is an exploratory study aimed to provide preliminary knowledge on the issues being examined. In particular, the respondents were people directly or indirectly acquainted to the researchers, and mainly included working individuals in IT/ITES employees. Although this method poses limitations to generalizing the results, the study can be regarded as a preliminary step to allow the researchers approximate the relationship between the variables being researched.

The questionnaires, which were formulated in English, were distributed via email using an electronic survey form and also via paper questionnaires. A total of 200 paper questionnaires were distributed, and 175 questionnaires were included in the study and the remaining were found defective.

3.2. Dependent Variable: Individual Saving (SVG)

The dependent variable is individual saving, which is measured as a binary variable where 1 indicates having positive saving, and 0 indicates no saving. More specifically, respondents were asked about their income and spending over the past year. If spending exceeded or equaled income, individual saving was coded 0 (no saving). If spending was less than income, individual saving was coded 1 (positive saving). Such qualitative measures of saving have been employed by other renowned researchers from various countries, such as Harris, Loundes, Webster (2002) in the context of Australia, Alessie et al. (1999) in the context of Netherlands, and Bucks, Kennickell, Moore (2006) in the context of US.

3.3. Independent Variables

Financial literacy was measured by a series of questions based OECD questionnaire. Only basic financial literacy was tested. It tests the respondent's knowledge on basic financial literacy such as working of interest rates, inflation, and risk diversification; Correct responses were coded 1, and incorrect answers were coded 0. The sum of scores, which ranged from 0 to 7 provides a measure for literacy level. A higher score indicates a higher financial literacy level, and vice versa.

Risk-Taking Behavior (RISK_TOLERANCE): Risk-taking behavior also was coded from 1 to 4 from the person who was willing not to take any financial risk to the person who was willing to take substantial financial risk. A higher value indicates a higher level of risk tolerance, and vice versa.

Saving regularity (SVG_REGULARITY): Saving regularity shows the frequency that people save money; or in other words, how often they save. There are five

levels of saving regularity: never save, save very rarely, save occasionally, save very frequently and always save.

Demographic variables: Demographic variables included gender, age, income level educational level, number of dependents and occupation.

4. HYPOTHESES TESTED

The following relationships between the dependent and independent variables are predicted the hypotheses to be tested are:

Hypothesis 1: Individual's financial literacy level is positively related to individual saving (+).

Hypothesis 2: Demographic characteristics are significantly related to individual saving.

This hypothesis can be broken into details as follow:

- a. Age is significantly related to individual saving (+)
- b. Gender is significantly related to individual saving (+)
- c. Number of dependents is significantly related to individual saving (+)
- d. Income is significantly related to individual saving (+)
- e. Education level is significantly related to individual saving (+)
- g. Risk tolerance is significantly related to individual saving (-)

Hypothesis 3: Individual's saving regularity is positively related to individual saving. (+).

5. RESULTS

5.1. Descriptive Analysis

5.1.1. Socio-demographic Variables

From a total of 192 respondents, 54% of them were male and 46% of female.

In regards to occupational status, 31% of the respondents were employed individuals, 36 % were students, 14% were housewives, 6% were unemployed individuals and 13% were retirees.

5.1.2. Financial Literacy

The financial literacy part measures respondents' basic financial knowledge (BASIC_LITERACY). The basic knowledge is mainly about their understanding of inflation, interest and percentage calculation. **Table 1** shows the summary of the specific questions asked and the percentages of correct and incorrect answers to each question.

Table 1

S.No	Basic Financial Literacy Question	Correct Answer %	Incorrect Answer %
1	Basic Mathematical division: Imagine that five brothers are given a gift of Rs.1000. If the brothers have to share the money equally how much does each one get?	86.5%	13.5%
2	Interest Rate: You lend Rs.50 to a friend one evening and he gives you Rs. 50 back the next day. How much interest has he paid on this loan?	79.7%	20.3%
3	Inflation Rate: High inflation means that the cost of living is increasing rapidly	79.7%	13.54%
4	Interest Rate: Suppose you put Rs. 100 into a savings account with a guaranteed interest rate of 2% per year. You don't make any further payments into this account and you don't withdraw any money. How much would be in the account at the end of the first year, once the interest payment is made?	56.4%	43.6%
5	Diversification of Risks: It is usually possible to reduce the risk of investing in the stock market by buying a wide range of stocks and shares	66.5%	33.5%
6	Risk and Return: An investment with a high return is likely to be high risk	63%	37%

As Table 1 shows, general knowledge of respondents regarding basic financial topics can be considered as high. These questions are considered by OECD for measuring financial literacy. From the table it is understood that the respondents have good understanding of interest, inflation and investments and it is concluded that the respondent's financial literacy should be tested with advance questionnaire given by OECD for measuring advanced financial literacy level.

5.1.3. Multiple Regressions

To examine the impact of selected variables (Age, Income, Education, Profession) on financial literacy; the multiple regression technique has been applied. The financial literacy level being considered as dependent variable and other variables fitted in the regression equation as independent variable.

$$Y = a + bx_1 + bx_2 + bx_3 + bx_4 + bx_5 + c$$

Y = Literacy Level, x_1 = Gender x_2 = Age x_3 = Income x_4 = Education, bx_5 = Occupation,

a = constant, b = regression coefficient and c = standard error

The regression table exhibits that financial literacy is influenced by age and education ($\beta = .060$; $\beta = .953$) and statistically significant at 5% level of significance.

It implies that with the increase of age the person develops knowledge on financial instrument through informal education. Similarly, educated people are more acquainted with the financial instruments.

Regression Coefficients

<i>Model</i>	<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>	<i>t</i>	<i>Sig.</i>
	<i>B</i>	<i>Std. Error</i>			
(Constant)	.366	1.033		.354	.724
GENDER	-.319	.295	-.027	-1.080	.283
AGE	3.50E-02	.017	.060	2.065	.042
INCOME	6.660E-07	.000	.029	0.625	.533
EDUCATIO	2.990	.084	.953	35.70	.000
OCCUPA	.173	.112	.050	11.541	.127

a. Dependent Variable: LITERACY

Model Summary

<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std Error of the Estimate</i>
1	.990 ^a	.980	.979	.78

a. Predictors: (Constant), OCCUPA, AGE, EDUCATIO, GENDER, INCOME

6. CONCLUSIONS

Saving is essential for the long-term development and economic growth of a nation. In addition, saving acts as a contingency for individuals and countries in the event of economic downturns and financial crisis. This paper has examined the factors that influence individual saving with a focus on financial literacy, in the Indian context.

Overall, this study has shown the financial literacy is an important determinant of individual saving. Financial literacy, which is defined as individuals' knowledge about basic and advanced financial topics, such as knowledge/computation on interest rate, inflation rate, percentage calculation has been found to be positively related to the probability of having positive saving amongst individuals. This result, although a preliminary finding from this exploratory research, suggests that if the government aims to increase saving amongst households, it should increase efforts in promoting financial literacy through basic educational programs regarding financial issues. Although the results indicate that individuals have a relatively good level of basic financial knowledge, such as computing interest rates/percentages and knowledge on relative riskiness of financial assets, the understanding of the stock market, unit trusts and risk-return of assets are the scope for the further research on this topic.

However, there are several limitations of the study. The first limitation is that the results are not generalize to the population since a non-probability, convenience sampling method was conducted. To offer valid generalizations, a more comprehensive study on a more representative sample of the population is suggested for future research.

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