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STUDY ON THE FINANCIAL RISK PROFILE OF INVESTORS IN CHENNAI

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Abstract- Financial risk profiling assesses the investor's attitude towards risk when making investment choices and accordingly categorise them into risk averse and risk seeking. The aim of this study is understand the financial risk profile of the investors in Chennai and classify them into the different categories. The influence of socio-demographic factors on the investor's risk profile is also studied. Also, this study examines the relationship between the subjective and objective risk tolerance of the investor. Regression analysis is done to find the influence of the socio demographic factors on the investors risk profile. It was found from the study that the socio demo factors like age, income, occupation have a significant influence on the risk taking capacity of the investor whereas gender does not have any significant relation with the investor's risk profile. Majority of the investors in Chennai are risk neutral, somewhat risk averse and somewhat risk seeking. Very few are present in the risk averse and risk seeking area. Also from this study it was found that there exists no significant relationship between the subjective and objective risk tolerance level of the investor.

Keywords: Financial risk, Investor attitude, Investment, Risk Profile, Risk tolerance

I. INTRODUCTION

Extensive research is being done by economists and psychologists on the perception of human risk. Right from the time humans come to the world they have been subconsciously trained to be averse to any negative incidents. Damodaran sates that humans and animals have been intuitively trained to look for any danger that can affect his/her well-being. He further emphasis on the Duality of risk. He notices that individuals tend to seek risk in certain areas and at the same time they avoid risk in other areas.Accordingly risk taking as such differs in different domain and earlier it was classified into 4 domains. Later (Jackson, Hourany, and Vidmar (1972) extended the domains as Physical, social, ethical, financial and health. It was also found out that individuals behave consistently within domains but not across domains (weber et al 2008). For example, person who is rides a two wheeler without wearing a helmet will exhibit the same attitude when it comes to driving a car by not adhering to the safety standards, i.e. he is a risk taker in the physical domain by retaining the risk himself. However the same person may or may not be a financial risk taker. Within the financial risk tolerance domain, there are no sub-domains.

The aspect of Risk varies from person to person and as such is very subjective. Research studies point to the fact that often we tend to look at the past for some confirmations to adjust for the future. Many a time we encounter many uncertain events which may end in an unfavorable experience even though the probability of its occurrence is very small. Our outlook towards risk is also based on how our mind subconsciously frames our attitude towards certain objects, words and colours.

1.1 Risk aversion theories

This section discusses the concept of risk that exists in the different social domains. An overview of risk theories is discussed followed by the risk return matrix and the different attitudes in risk.

1.1.1 The Theory of Utility by Daniel Bernoulli. Based on the theory of marginal utility, the main basis of this theory is that the value of a product or service is based on its price but rather on the utility it yields. Extending the marginal utility theory, marginal utility decreases as wealth increases i.e. utility for wealth increases as wealth increases but on a decreasing rate. Since it adhered to the fundamental economic principle, this theory was accepted until psychologists challenged the theory and new ideas on Behavioral aspects with regards to other parameters were presented.

1.1.2 The Prospect Theory. Daniel Kahneman & Amos Tversky challenged the above theory stating that though wealth utility is in the classical economic model it had anessential aspect missing in it. They both

pointed that a point of reference was missing when different states of wealth is compared using the utility theory. The Prospect theory listed following attributes, a) Risk aversion & Risk seeking (the attitude to avoid and seek risk, b) Loss aversion (not wanting to encounter losses), c) Framing (the art of mental framing of events), d) Non-linear preference. They pointed out that when losses and gains are compared losses loom larger than gains in the minds of the people and hence a person is more of a risk seeker when it comes to losses and more risk averse when it comes to gains.

1.2 Risk attitude

It is more easer to measure risk attitude rather than defining it.

Saucier and Gerard (2000) notes the ambiguity and lack of consensus in defining Risk Attitudes. In all the available literature available on this psychological trait, the following recurrent themes are identified. A) Diverse dimensions (opinions, beliefs, values), B. evaluations (like, dislike, preference), Objects (attractive ideas).Sultana and Pardhasaradi (2011) aimed to investigate the relationship between socio economic factors and the financial risk tolerance of individual investors. The study concluded that Indian investors are conservative with 41% low tolerant and 34% being high tolerant. Their analysis further revealed that marital status, earnings, occupation and number of dependents are significantly associated with risk tolerance.Maccrimmon and Wehrung (1990) found that propensity to take risk is a multi-dimension construct. They identified threeareas where the propensity towards risk changes, a) hypothetical risk situations, b) risk situationsoccurringnaturally, c) Self-reported risk attitudes.Cordell (2001) separates Investment risk tolerance into four categories. a) Propensity to take risk, b) The attitude to accept monetary risk, c) Capacity and capability to incur risk, d) Knowledge of Risk –Return payoff

1.3 Is risk taking situation specific or cross situational?

Many studies have been conducted to if risk taking is specific to situations or is it a cross situational disposition. Alternately studies have been conducted to see if there is a consistency in risk attitudes or behaviour and if any particular trait can be fixed as common across risk taking situations.Many researchers argued that the behaviour of risk taking is a general disposition and tried to look out for common relationships across risk taking. Eysenck and Eysenck (1978) tried to establish the above fact but were not able to come up with any concrete evidence to support the claim.Zuckerman (1983, 1994) Marvin Zuckerman observed sensation seeking as a general trait for risk behaviour. He was of the opinion that this particular trait could predict financial risk taking in behaviour.Wong and Carducci (1991) did a study with students and found out that students with a greater level of sensation seeking traits have greater risk taking tendencies when it comes to taking every day financial decisions. Slovic (1964) He noted that there exists no correlation between the identified nine measures spread across the different domains. Kogan and Wallach (1964) examined the relationship among a wide variety of risk measures like betting scenarios, lottery choices based on motor skill tasks. Their research could not provide any proof of any common risk taking behaviour across the domains. Weber et al (2002) measured risk in five different domains like financial (investing and gambling separate constructs), health/safety, ethical, recreational, and social decisions. They posted that their results strongly implied that risk taking is very specific to domains.

1.4 Objective and subjective Risk tolerance

Various studies on Risk tolerance have used either subjective measure or Objective measures. The commonly used method is to have a combination of both to measure the Risk tolerance of the subject.Objective risk tolerance is measured as the ratio of risky financial assets to an individual's total wealth. Subjective Risk tolerance is measured by the individual's responses to questions about their Risk tolerance.

Grabble and Lytton (1998) investigated the relationship between age and the subjective risk tolerance. The study shed light that there is an inverse relationship between age and subjective risk tolerance. Individuals tend to have high scores when young and low scores when they get old.Chang et al (2004) did a study on the determinants of subjective and objective Risk tolerance. Education, race, employment were determinants of both subjective risk tolerance and objective risk tolerance. Moreover they pointed that subjective risk tolerance positively influenced objective risk tolerance. Hanna and Chen (1997) differentiated subjective risk tolerance and objective risk tolerance. They state that the effect of objective risk tolerance is based on the investment horizon and the ratio of the household's financial assets to total wealth. Investors relative risk aversion is used to investigate the effect of the subjective risk tolerance.

1.5 Measures of Risk tolerance

There are no formal procedures and tests to assess the financial risk tolerance of an individual. At the macro level, we can distinguish between actual behaviour and performance using questionnaires, simulations etc.

Hanna et al (2001) enumerated four different types to measure risk, a) Investment choice measurement, b) A combination of investment and subjective questions, c) Hypothetical risk questions, d) Measure of actual behaviour. Researchers use either one or a combination of the above to establish Risk tolerance levels. Blanco et al (2012) tried to discover if there is a consistency between measures of risk tolerance. The identified three measures, first measure used by Grable and Lytton (1999), second measure from Barsky et al (1997) and the third Survey of Consumer finances on risk tolerance. They found out that the scores were inconsistent across the three measures and suggested further research on subjective risk tolerance.Barsky et al (1997) conducted a study for economic skeptics about subjective questions on risk taking. They assessed risk tolerance for different behaviour like smoking, drinking, having on health or life insurance, holding stocks or other risky assets. They posted that for all the behaviour they investigated, the risk tolerance measure made qualitatively correct predictions.

II. SOCIO – DEMOGRAPHIC STUDIES

The study of demographics is of paramount importancein research of any social discipline. Sultana and Pardhasaradi (2011) reveal the importance of risk profiling for in asset allocation. Socio economic characteristics such as marital Status, earning, occupation and number of dependents are dependent on risk tolerance but education level, regularity of investment decision are independent on risk tolerance.Anbar and Eker (2010) report that financial risk tolerance is one of the important factors which need to be addressed before making investment decision.

III. GAPS AND LIMITATIONS FROM THE LITERATURE REVIEW

The following gaps in the existing studies were identified while reviewing the literature.

Based on the literature reviewed, major focus has been given to the study of risk profiling limited to investment behaviour in the stock market both globally as well as in India. Few studies have undertaken keeping in mind other investment avenues. From the review of literature it can be seen that lot of studies have been done which points the influence of various demographical factors and risk tolerance. (e.g. Dhar and Zhu, 2006; Da Costa et al., 2006; Barber and Odean, 2001; Bhandari and Deaves, 2006). It will be interesting to study if these investment decision influencing socio-demographic variables are in norm with the existing study.

IV. OBJECTIVE OF THE STUDY

The main objective of the study is to understand the risk tolerance level and biases associated with the investors and see if it is in line with findings done earlier. Investment choices responses help to identify the investor type and the study looks if the risk profile and Investor type match. The study would be incomplete if the socio –demographics factors are not studied in relation to the risk profile and behaviour bias of the investor

4.1 Outline of the objectives

Is the risk profile influenced by the socio demographic factors of the investors in Chennai? Is the investment decision of the investor influenced by his risk taking ability?

4.2 Hypothesis:

Socio Demographics influence on Risk taking ability and investment decision

A. Socio Demographic factors like Age, Gender, Income, Occupation does not influence the risk taking ability of the Investor

B. Socio Demographic factors like Age, Gender, Income, Occupation does not influence the investment decision of the Investor

V. METHODOLOGY

This sections discusses the methodology adopted to identify the target population and the sample size for the study

5.1 Target Population

The target population for this study represents all working class individuals in Chennai who are investing in any investment avenue.

As per world population review, the estimated population (inclusive of the migrants from other states) of Chennai in 2019 is approximately 11 million. Taking the national estimate of workforce as per census data 2011 as 40% the target population is arrived at 4 million individuals who are in the work force. Since it isnot practical to use the entire target population for this study, a selected sampling size is taken as recommended by previous researchers

5.2 Sample Size

The widely accepted Cochran formula to determine the sample size is used in the current study.

The confidence level for this survey is taken to 95%

The Margin error is taken to be 5%

The degree of variability is taken as 50%

$$n_0 = \frac{Z^2 pq}{e^2}$$

Applying Cochran formula,

Z score =1.96 from the table

p =.5

q = (1-p) =.5

e =.05

Sample size = $\frac{(1.96)^2 * (.5)\ (.5)}{(.05)^2}$ = 385

5.3Risk taking ability scoring

Risk taking ability is determined by 10 questions, five on general risk taking ability and five specific to investment and gambling on a 5 point scale.5 being Risk seeking and 1 Risk averse. A score above 30 is taken as risk seeker and a score below 20 is taken as risk avoider. Scores between 20-30 is taken as risk neutral. The score is again coded back for data analysis to be used by SPSS 18 software as shown in Table 1.

Table1: Risk profiling coding pattern

Score	Code	Remarks
0-10	1	Risk Avoider
11-20	2	Somewhat Risk avoider
21-30	3	Risk neutral
31-40	4	Somewhat Risk seeker
41-50	5	Risk seeker

Investment decision score is got from a list of 5 questions to determine the investor type. Each question has 5 options and score of 5 is given to the risky choice and score of 1 is given to least risky choice chosen. The score is summed up coded again for analysis purpose as shown in Table 2.

Table2: Investment decision coding pattern

Score	Code	Investor type
0-5	1	Conservative investor
6-10	2	somewhat conservative investor

11-15	3	neutral Investor
16-20	4	somewhat aggressive investor
21-25	5	aggressive investor

VI. FINDINGS

The findings of the study done on the risk profile of investors in Chennai is presented in this section

6.1 Correlation between Risk and Socio demographics

Pearson coefficient test was done to check the level of correlation between the two factors risk and socio demographic factors like age, gender, income and risk. Risk was taken as the independent factor and the various socio demographic factors were taken as the independent variables.

Table 3: Risk and socio demographics

		Occupation	**Age**	**Gender**	**Income**	**Risk**
Occupation	Pearson Correlation	1	-0.344	0.009	0.215	-0.195
	Sig. (2-tailed)		0	0.856	0	0
	N	385	385	385	385	385
Age	Pearson Correlation	-0.344	1	-0.057	-0.666	0.498
	Sig. (2-tailed)	0		0.265	0	0
	N	385	385	385	385	385
Gender	Pearson Correlation	0.009	-0.057	1	0.035	0.025
	Sig. (2-tailed)	0.856	0.265		0.49	0.623
	N	385	385	385	385	385
Income	Pearson Correlation	0.215	-0.666	0.035	1	-0.303
	Sig. (2-tailed)	0	0	0.49		0
	N	385	385	385	385	385
Risk	Pearson Correlation	-0.195	0.498	0.025	-0.303	1
	Sig. (2-tailed)	0	0	0.623	0	
	N	385	385	385	385	385

Source: SPSS output

From Table 3, it is seen that the correlation between Risk and the socio demographic factors are significant with the p value below .05 except for the socio demographic factor gender. Hence null hypothesis is rejected for all socio demographic factors except for gender

6.2 Regression of dependent variable Risk on independent variableInvestor type

Table 4: ANOVA of Investor

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	50.041	1	50.041	95.562	.000a
	Residual	200.557	383	0.524		
	Total	250.597	384			

Source: SPSS output

Since the significant level is well below the acceptedlimit in Table 4, the model is significant and accepted

Table 5 – Coefficients of Investor

	Unstandardized Coefficients		**Standardized Coefficients**	**T**	**Sig.**
	B	Std. Error	Beta		
(Constant)	2.057	0.143		14.429	0
Risk	0.431	0.044	0.447	9.776	0

Source: SPSS output

Table 5 establishes a significant influence of the dependent variable on the independent variable. The regression equation can hence be written as,
Investor type =2.057+.447*(Risk)

6.3 *Influence of dependent variable subjective risk on independent variable subjective risk*
Table 6 is the model establishing subjective risk on objective risk

Table 6 – ANOVA of Risk tolerance

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.318	1	1.318	9.823	.002a
Residual	51.373	383	0.134		
Total	52.691	384			

Source: SPSS output
Predictors: (Constant), Subjective Risk
Dependent Variable: Objective Risk

This model can be accepted as its significance level is below .05

Table 7 – Coefficients of Risk Tolerance

	Unstandardized Coefficients		**Standardized Coefficients**	**t**	**Sig.**
	B	Std. Error	Beta		
(Constant)	3.553	0.092		38.471	0
Subjective Risk	0.088	0.028	0.158	3.134	0.002

Source: SPSS output

Table 7 shows that the model establishes a significant influence of the dependent variable subjective risk tolerance on objective risk tolerance. The regression equation can hence be written as
Objective risk tolerance= 3.553 +0 .158 * (subjective risk tolerance)

VII. CONCLUSION

From the above study, it can be found that socio demographic factors like age, income, occupation significantly influence the risk taking ability of the investor in Chennai.However, Gender has no relation with the risk taking ability of the investor in Chennai. Risk has a strong positive influence on the investor choices in investment and also subjective risk has a strong positive influence on objective risk.

Concluding the study, it is imperative to understand the risk taking ability of the investor to provide appropriate investment solutions. On their part, investors should analyse their attitude towards risk and understand the risk reward matrix before making investment decisions. Further research on the topic needs to be done as only four socio demographic factors were taken to analyse relationship between

risk and socio demographic factors. Further studies can be undertaken with more factors. The relationship between subjective and objective risk tolerance can be further done with other factors also.

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