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DO FINANCIAL LITERACY AFFECTS RISK TOLERANCE OF INDIVIDUAL INVESTORS?

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ABSTRACT

Risk tolerance is the risk bearing capacity of individuals. Every person is different from one another for the degree of their risk tolerance. Risk tolerance is affected by personal attributes like their gender, age, education level, family background & size, income level, occupation, marital status and all. The present study is focused on studying the relationship between demographic attributes of respondents and their risk tolerance. In present study the effect of financial literacy of the respondents on their risk tolerance is studied. A survey was conducted among 150 respondents from Jalandhar city and data was analyzed by applying Chi-Square and Regression Analysis through SPSS. The results approved the both alternative hypotheses. The study observed the association between gender of respondents and their risk tolerance to be statistically significant. The final conclusion of the present study is that financial literacy of the respondents significantly affects their risk tolerance. The study has limitation regarding research area that was restricted to Jalandhar City only.

Keywords : *Financial Education, Financial Literacy, Investment, Risk Tolerance,*

INTRODUCTION

In traditional finance theory, everyone is rational in maximizing wealth but many a times; our rationality is influenced by our emotions & irrational financial decisions. Behavioral finance is an area where behavioral and cognitive psychological theory are combined with conventional economics and finance so that the reasons of irrational financial decisions made by rational people could be find out. It can be described as a study of psychological & sociological factors affecting the financial decision making process of individuals, groups, corporate entities & other financial practitioners. How the investors judge, foresee, break down and audit the systems for choice making, which incorporates venture brain science, data assembling, characterizing and comprehension, exploration and investigation uncovers one's investment behaviour. The investment behaviour of the investors is depicted through the amount of money invested by them out of their total savings, frequency of their investment, financial instruments in which they invest and through their risk attitude.

Money related proficiency is the situated of aptitudes and information that permits a person to settle on educated and compelling choices with the majority of their budgetary assets. The capacity to see how

cash functions on the planet, how somebody figures out how to win on make it, how that individual oversees it, how he/she contribute it and how that individual gives it to help other people is known as financial literacy.

Whenever there are more than one possible alternative to any situation, an individual is exposed to risk. Risk means uncertainty of a return and the potential for financial loss. Financial risk tolerance is the measures the willingness of investors in accepting the variation while taking financial decisions. Risk tolerance is the comfort of investors with the inherent risk in a given type of investment.

LITERATURE REVIEW

Focusing upon the research objective of the study, literature concerning the research variables is reviewed as follows:

Harris et al (2006) examined the gender difference in risk assessment. They collected the data from 657 respondents and analyzed by using regression and t-tests. They found that men and women were different in their assessments of likelihood and negative outcomes. They concluded that women were less engaged in risky activities such as gambling, health and recreation but the gender did not differ in taking social risks.

Ajmi (2008) used the questionnaire to collect the data from 1500 respondents. He recommended the determinants of risk tolerance of individual investors in Bahrain. He observed that women had less risk tolerance than the men. His findings concluded that highly educated investors with sound wealth seek risk more than the less educated one.

Eckel (2008) reviewed the results which were given from experiments of risk aversion behavior of men and women. The data was analyzed by using correlation. He found that the married people were involved in less risk investments than the unmarried and also explained the difference in cumulative wealth of gender. Men preferred to hold more stock, risky investments, efficient investments and more of their wealth in risky assets. He concluded that single women were more risk averse than single men.

Anbar and Eker (2010) studied the rapport between demographic features and risk tolerance. They collected data from 1097 respondents in Uludag University, Turkey and analysed by using ANOVA, t-tests and logistic regression analysis. They inferred that the gender orientation, division, working, individual salary, family wage and aggregate net resources had a critical impact on risk resistance yet age, number of kids and conjugal status had no impact on risk tolerance.

Ahmad et al (2011) investigated how far different demographic factors i.e. gender, age, education, monthly income and marital status affect investors' financial risk tolerance. They collected data from 150 respondents from Rawalpindi/Islamabad through a structured questionnaire and analyzed the data with Multiple Regression analysis and t-test. They found a well-built rapport between various demographic factors and Risk Tolerance Score (RTS). Their results revealed that for significant difference in investors'

risk tolerance, education is the most significant factor. They concluded that married individuals and female investors were more risk reluctant as compare to singles and male investors in financial decision making.

Wong (2011) studied relation between demographic factors and risk tolerance in three countries. The tools used for data analysis were ANOVA and Regression. He found that with the increase in education and income, risk tolerance also increased and married people took less risk. The risk tolerance of Australian respondents was greatest in age and education, varied in marital status of U.S. respondents whereas U.K. respondents showed the volatility in gender and income.

Cavezzali et al (2012) examined how the financial literacy of people impacts their risk taking choices and investment behaviour. They collected data from 208 U. S. individuals through a structured questionnaire and analyzed the same by using Average, Standard Deviation and Regression Model. They found that financial literacy positively affects the risk taking decisions of individuals but less significant in explaining more sophisticated diversification strategies.

Lamba and Raheja (2014) considered the impact of demographic factors on the risk tolerance of investors. They examined the previous studies on risk tolerance and demographic factors individually and collectively and concluded that the various demographic factors like age, gender, education, income, affect the risk tolerance capacity of investors. They observed a positive relation between demographic factors and risk tolerance and males took more risk than females. The unmarried investor took more risk than the married investors. The educated people took more risk than the less educated one.

NEED OF THE STUDY AND RESEARCH OBJECTIVES

The literature available has not focused on the association between gender and risk tolerance or the influence of financial literacy on the risk tolerance of individuals. There are a limited number of papers available that has attempted to study the relationship between demographic attributes and the risk tolerance of individual but the influence of financial literacy on the risk tolerance of individuals has not been studies yet. This gap in literature is the inspiration behind this paper. This study will help in designing appropriate investment products that will be able to meet the risk criteria approach of investors having different risk tolerance.

OBJECTIVES OF THE STUDY

1. To study the impact of gender on the risk tolerance of the individual investors.
2. To study the influence of financial literacy on the risk tolerance of the individual investors.

The objective of the study is studied through following hypotheses:

H_0: There is no relationship between gender of individuals and the risk tolerance of individuals

H_1: There is a significant relationship between gender of individuals and the risk tolerance of individuals

H_{02}: Financial literacy does not have any significant influence on risk tolerance of the individuals

H_2 : Financial literacy has a significant influence on risk tolerance of the individuals

RESEARCH DESIGN AND METHODOLOGY

Research Design

The present study follows Descriptive Research Design as it describes the state of affairs as it exists at present. An attempt has been made to understand the association between gender and risk tolerance of the individuals and also the effect of financial literacy on risk tolerance of the individuals.

Sample Size

The data is collected from the 300 individual investors from the Jalandhar district of Punjab.

Sampling Technique

The Convenience Sampling Technique was used for the data collection.

Source of Data

The present study is a primary data based study, so the data is collected from the individual investors from the urban areas of the Jalandhar district of Punjab. The data from the individual investors was collected by using a well structured questionnaire.

Data Analysis and Interpretation

The data was collected from 300 respondents from Jalandhar district of Punjab consisting of 210 males and 90 females. As the data was collected by using convenience sampling techniques so gender of respondent was not given weightage. Following table shows the description of data size:

Table 1 :Gender of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	210	70.0	70.0	70.0
	Female	90	30.0	30.0	100.0
	Total	300	100.0	100.0	

Chi-Square Analysis was applied at 95% significance level to test the association between gender and risk tolerance of individuals. The risk tolerance of respondents is measured by summing up the total weightage of the answers to multiple questions having different weightage. There were total of 14 questions with 3 answer options. The weightage was assigned as for highest risky answer option the weight equal to 3, medium risk option 2 and for lowest or risk free option the weight equal to 1.

The results of the Chi-Square are indicated in table 2 as below:

Table 2 : Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	124.575	22	.000
N of Valid Cases	300		

The results of Chi Square Analysis shows the Pearson Chi-Square value being 124.575 with p-value 0.000 that indicates the significant association between gender of respondent and their risk tolerance at 95% level of significance. Hence we accept the alternative hypothesis H_{11} that there is a significant relationship between gender of respondent and their risk tolerance.

Regression Analysis is used to test whether financial literacy has any influence on the risk tolerance of respondents. The financial literacy is taken as an independent variable whereas the risk tolerance is assumed to be dependent variable. The financial literacy of the respondent is measured as their financial literacy score. A total of 13 questions were asked from the respondents to measure their financial literacy. Financial literacy score was calculated by assigning one mark to every correct answer and zero mark to every wrong answer.

The table 3 below represents the "Model Summary" is an important table in Regression Analysis as it demonstrates how well our general model fits and how well our indicator financial literacy score, has the capacity to anticipate the risk tolerance of the respondents. The first and the primary measure in the table is R value, the coefficient of correlation is 0.876 at 95% level of significance which shows a very high degree of positive correlation between financial literacy and risk tolerance. The coefficient of determination, R Square is 0.853 which indicates that financial literacy can predict 95.3% of the risk tolerance of the respondents. The higher value of Adjusted R Square i.e. 0.852 indicates the goodness of the model.

Table 3 :Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.876[a]	.853	.852	1.21616

a. Predictors: (Constant), FL score

Table 4 : ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	5960.019	1	5960.019	2971.834	.000[b]
	Residual	296.814	148	2.006		
	Total	6256.833	149			

a. Dependent Variable: RT score
b. Predictors: (Constant), FL score

The ANOVA Table shows the F-test outcome showing a measure of the absolute fit of the model to the beta. Here, the significance value of F-test is 0.000 as shown in last column of the table and highly significant at 95% level of significance, so the model does fit the data.

Table 5 : Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	10.877	1.190		9.142	.000	8.526	13.22
FLscore	5.434	.100	.876	54.515	.000	5.237	5.63

a. Dependent Variable: RTscore

In the table 5, the segment headed 'Unstandardized Coefficients', gives the estimation of the consistent, a, which is the capture or the anticipated estimation of X if Y is 0, as it were if financial literacy scores are 0 the risk tolerance score is 10.877. It likewise gives the b (subordinate variable – hazard resistance score) coefficient that is the estimation of Y will change by if X changes by 1 unit. The b quality is 5.434, so if financial literacy scores go up by 1, the risk tolerance scores are anticipated to go up by 5.43

The last segment in the table demonstrates the measurable essentialness of the relationship between the independent and the dependent variable. At 95% huge level, as p-worth is 0.000 so it shows that the relationship is factually critical and statistically significant. Hence, we accept the alternative hypothesis H_{21} which assumes that financial literacy significantly affects the risk tolerance of the respondents.

CONCLUSION

The present study is an endeavour to fill the research gap in the available literature regarding the rapport between financial literacy and risk tolerance and of course the effect of former on later. In

the present study 150 individual investors were approached personally to get their responses on a structured questionnaire to achieve the research objectives. The first objective of the present study was to study the association between gender of the respondent and their risk tolerance. The statistical package for social science (SPSS) was adopted to analyze the data. Results of Chi-Square Analysis rejected the first null hypothesis H_{01} and supported the existence of significant association between gender of respondents and their tolerance. The Regression Analysis was applied to test the hypothesis H_{02} for the second objective i.e. to study whether financial literacy affects the risk tolerance of the respondents. The results were amazing as a very high degree of correlation i.e. 0.876 and a very high degree of variance i.e. 0.853 was observed. The results suggested the rejection of second null hypothesis too. Hence, the study concludes that there is a significant association between gender of the respondent and their risk tolerance and also that the financial literacy of the respondents significantly affects the risk tolerance of the respondents.

LIMITATIONS AND FUTURE PROSPECTS

The present study has its own limitations as regards to sample area, that was Jalandhar city itself only and the sampling techniques as we used the convenience sampling technique. Further studies can be conducted by enlarging the sample size and widening the sample area. Moreover in present, we tested the association of a single demographic attribute that is gender with the risk tolerance of the respondents, in future studies, some more attributes can be added. The financial literacy score and risk tolerance score were calculated on the basis of asking 13 and 14 questions respectively, which can further be increased.

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