

Impact of Risk Perception on Investors towards their Investment in Mutual Fund

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Abstract

Risk is an inherent feature of all types of financial investments. The concept 'risk perception' means the way in which investors view the risk of financial assets, based on their concerns and experience. The risk perception of investors is an important factor that influences the investment behaviour. In the present paper, impact of risk perception of the bank employees in Tripura on their investment behaviour in mutual funds is analyzed. It is found that overall level of risk perception of bank employees in Tripura towards mutual fund is of moderate level. It is also found that risk perception and volume of investment in mutual fund is inversely related.

Keywords: Bank employees, Risk Perception, Investment behaviour.

Introduction

Mutual fund is a trust that pools the savings of a number of investors. The money collected is then invested in different types of securities under the supervision of expert fund manager. The incomes generated through this investment are shared by unit holders in proportion to the number of unit owned by them.

Mutual funds provide opportunities for small investors to participate in the capital market without assuming a very high degree of risk (Walia and Kiran, 2009; Walia and Kiran, 2012). A small investor is not able to have a diversified portfolio mainly due to scarcity of resources. A mutual fund pools together the savings of such small investors and invests the same in the capital market and passes the benefits to the investors (Kumar, 2011). So, investors need not to monitor the market on daily basis for making investment in various avenues of financial products with the objective of generating income (Sindhu and Kumar, 2014).

There are several factors identified by the researchers which affect the investment in mutual fund. One such trait is risk perception (Weber and Milliman, 1997). The influence of risk perception on the investment decisions of a cautious investor is a rising issue in the behavioral finance literature (Singh and Bhowal, 2010).

Risk perception is the way in which investors think about the risk of an asset, based on their concerns and experience (Singh and Bhowal, 2008). Risk perception is the belief, whether rational or irrational, held by an individual, that play effective role in making decision in risky situations (Sindhu and Kumar, 2014).

Bank employees are considered to possess relatively higher degree of

financial literacy. Of late, most of the banks have sponsored their own Asset Management Companies and thus, they are promoting mutual funds under the brand name of their own. Employees consider mutual fund as relatively less risky than direct investment in equity shares (Singh and Bhowal, 2010). Further, employees consider the securities offered by their employer as less risky than other securities (Singh and Bhowal, 2010)

Therefore, risk perception of bank employees towards mutual fund is an emerging area of behavioural science. According to the behavioural finance theory, decisions could be influenced by unavoidable psychological and emotional factors. The decision making behaviour of an investor is influenced by their attitude towards risk. At different levels of perception towards risk, the individual investors view differently about their investment and make decisions differently. Investors take risks according to their perception which ultimately affect their behaviour towards risky investment decisions. In this situation, in the present study an attempt is made to examine the influence of risk perception of bank employees on their investments in mutual funds.

Impact of risk perception on investment behaviour

Numbers of studies have been conducted regarding impact of risk perception on investment behaviour. It is found in the earlier research that the people's level of risk perception affects their equity share investment decisions (Singh and Bhowal, 2009). Risky decision-making behaviour is influenced by risk perceptions (Sitkin and Weingart, 1995; Sitkin and Pablo, 1992; and Riaz et al, 2012). Risk is a vital factor that influence investors' investment decisions because it is the risk that determines an investor's probable return (Yang and Qiu, 2005). Investor perceptions exhibit significant changing over the course of the crisis, with risk tolerance and risk perceptions being less volatile than return expectations (Hoffmann, Post and Pennings, 2013). The decision to switch funds within a fund family is affected by investor's attitude towards risk (Lenard et al. 2003). Many investors want to invest in mutual fund in order to have high gain at low level of risk, safety liquidity (Rathnamani, 2013). From the above literature, it is clear that risk perception of investors have influenced their behaviour with respect to investment in mutual fund.

Risk perception and mutual fund investment

While going for investment in risky assets like mutual fund, people try to make proper tradeoff between risks and return (Fischer and Jordan, 2006). Moreover, people are risk averse (Kahneman and Tversky, 1979). Understanding about mutual fund investment by the people is very complex. Even the experienced investors make mistake in assessing the mutual fund and equity shares (Kida et al, 2010). It is found in the earlier research that the people's level of risk

perception affects their equity share investment behaviour (Singh and Bhowal, 2009). Investment in mutual fund is indirect investment in equity shares. Hence it is expected that investment in mutual fund is also affected due to the risk perception of the people. Singh and Bhowal (2010) found that mutual funds are considered as relatively less risky than that of equity shares. Singh (2009) found that mutual funds are preferred more among the employee investors than the direct investment in equity shares. Therefore, in this study, impact of risk perception on mutual fund investment is considered to be studied.

Measuring risk perception related to investment

Psychologists are interested in finding ways of measuring perception of risk, since it is an important component in any decision-making process. It has been established from the earlier studies that the risk perception can be managed if one is aware of the various dimensions of risk and the reason for the said level of risk perception (Singh and Bhowal, 2008). Risk perception can be managed and the policy makers should try to manage the risk perception for implementing various policies etc. (Singh and Bhowal, 2008). This can be possible only if one is aware about his/her level of risk perception. There are several studies which have been conducted to measure the risk perception. MacCrimmon, and Wehrung, (1990) have devised a tool for measuring risk propensity of the top executives of the top 509 companies in the world. Sitkin and Pablo (1992) re-conceptualized the determinants of risky behaviour. Sitkin and Weingart (1995) highlighted the determinants of risky decision making behaviour and the role of risk perceptions. There were studies conducted to design the appropriate measure of risk and to establish relation between risks and return (Powers, 2009). Doff (2008) have conducted the study to define business risk and to investigate business risk measurement methodologies. From the above, it is evident that there very few studies conducted to measure the level of risk perception of investors in financial securities.

In the present study, the risk perception of the bank employees has been measured in respect of mutual fund. Risk perception is measured using the tool developed by (Singh and Bhowal, 2011). In this study several features of mutual fund are identified to describe several aspects of risk perception. All these items are designed to measure the risk perception as a latent variable.

Objectives of the study

The objectives of the present study are as follows:

- a. To ascertain the level of risk perception of bank employees of Tripura in respect of their investment in mutual fund.
- b. To find out the impact of risk perception of bank employees of Tripura on their investment behaviour towards mutual funds.

Hypothesis of the study

The null hypothesis formulated for the study is given below.

H01: There is no significant association between risk perception of individual investors and their investment behaviour towards mutual fund.

Research Methodology

The study is conducted using the following research methodology:

Universe of the study

The universe of the study consists of all those bank employees in Tripura who are employee of a bank which is having own sponsored mutual fund. The total numbers of such employees as on 1st July, 2015 are 815.

Sampling unit and Sample size

Using simple random sampling design from the population of 815 employees at 95% confidence level and 5% confidence interval, a sample of 262 employees is obtained. This sampling unit is the individual bank employee who is from the bank which is having own sponsored mutual fund.

Data collection

In order to achieve the objective of the study, a well-structured questionnaire was prepared and used for collecting primary data. For secondary data, journals, magazines and newspapers are consulted.

Development of Questionnaire

Questionnaire is developed for collecting primary data. To measure risk perception of bank employees towards investment in Mutual fund, 18 items were considered. The items were given as follows

- First item was related to idea of investor about the investment in mutual fund,
- Second item was related to certainty of income in mutual fund,
- Third item was related to steady income,
- Fourth item was regarding difficulties in calculating income from investment from mutual fund,
- Fifth statement was related certainty of the return of the invested sum,
- Sixth variable was with respect to certainty of the return of the invested sum,
- Seventh item was regarding the investor become a victim of fraud committed by others,
- Eighth statement was related to difficulties in selecting type of mutual fund for investment,
- Ninth item was related to difficulties in understanding the NAV fixation mechanism related to mutual fund,
- Tenth item was related to confident regarding time and NAV at which mutual fund are to be bought and sold for a best bargain,

- Eleventh item was related to pattern of change in the NAV of mutual fund de-motivates investor in regard to the investment in mutual funds,
- Twelfth item was related to difficulties in tracking the daily NAV movement of mutual fund of the companies,
- Thirteenth statement was related to education required for investment in mutual fund,
- Fourteenth statement was related to investment in mutual fund is risky is told by others,
- Fifteenth item was related to the fear of to be victimized of scandals are reported in papers,
- Sixteenth item was related to loss is suffered by others in mutual fund investment rather than amassing huge money,
- Seventeenth item was related to the integrity of the local agents,
- Eighteenth item was related to grievances issue faced by investor of mutual fund and how it is redressed.

For measuring risk perception, the responses on above mentioned items were obtained on a five-point scale ranging from 5 to 1 where 5 denotes very high and 1 denotes very low level of risk perception.

Further, to know about the investment behaviour of the bank employees in mutual fund, information about their present investment in mutual fund was sought. They were asked to provide information about their investment in mutual fund and the options given to them were as follows: no investment, less than 25% in mutual fund out of their total investment, less than 50% in mutual fund out of their total investment, less than 75% in mutual fund out of their total investment, 100% of their total investment in mutual fund.

Data analysis

To measure the risk perception of investors, statistical tests like mean, standard deviation, Cronbach's alpha etc. are used. The reliability of the questionnaire is assessed by computing coefficient alpha that measures the internal consistency of the items. Alpha was developed by Lee Cronbach in 1951 to provide a measure of the internal consistency of a test or scale. Internal consistency describes the extent to which all the items in a test measure the same concept or construct and hence it is connected to the inter-relatedness of the items within the test (Tavakol and Dennick, 2011). For assessing the influence of risk perception on investor behaviour, ordinal logistic regression analysis has been used.

Analysis and Findings

Analysis and findings of the study is given under the following paragraphs:

Reliability of the tool

Table 1: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.901	.939	18

Source: Compiled from questionnaire

The reliability of the scale is performed and coefficient of Cronbach's Alpha was found to be 0.901 for 18 items (or statements) considered for the study. A very high value of Cronbach's Alpha (0.901) is indicative of very high degree of reliability of scale and it also shows that the items are highly correlated. Cronbach's Alpha of more than 0.70 is considered to be good measure of reliability of scale

(Nunnally, J., 1978).

Measuring risk perception of the bank employees

The items statistics for the risk perception of bank employees to the various items considered for the study is presented in table 2.

Table 2: Item Statistics

Particulars	Mean	Std. Deviation
I have very little idea about the investment in mutual fund.	3.2786	1.11187
There is no certainty of income	3.1641	.97859
There is no steady income	3.2710	.96641
It is difficult to calculate income from investment from mutual fund	3.2176	1.00687
I do not understand the complex rules and regulations of mutual fund investment	3.1450	1.01424
It is difficult to understand the NAV fixation mechanism related to mutual fund	3.1527	1.04293
I feel less confident regarding time and NAV at which mutual fund are to be bought and sold for a best bargain	3.1641	1.00942
Pattern of change in the NAV of mutual fund de-motivates me in regards to the investment in mutual fund	3.2137	3.31028
It is very difficult to track the daily NAV movement of mutual fund of the companies	3.0000	1.11761
I do not have sufficient education required for investment in mutual fund	2.9695	1.10338
Others told me that investment in mutual fund is risky	3.0649	.99788
I have seen others to suffer loss in mutual fund investment rather than amassing huge money.	3.0076	.97475
I doubt the integrity of the local agents.	3.0305	1.02040
In case of grievances I am not sure where I should register my protest and get my grievance redressed	3.0076	1.06491
Investment in mutual fund is very complex	3.0038	1.03390
It is difficult to select type of mutual fund for investment.	2.8893	1.04641
Very often mutual fund related scandals are reported in papers and I am afraid of investing in mutual fund	2.8779	1.02477
It is very much likely to become a victim of fraud committed by other	2.7137	1.03859

Source: Compiled from questionnaire

The highest mean value is 3.27 and lowest mean value is 2.71. Thus, the range of mean value is 0.56(3.27-2.71). Dividing the range by 3, it is 0.18667. Adding 0.18667 with 2.71 (lowest mean value), the interval of 2.71-2.89 is

obtained which is categorized as the items having relatively low risk perception. Similarly, subsequent levels are obtained and it is exhibited below

Table 3: Interpretation table

Range of risk perception	Interpretation of scale value
2.71-2.89	Low risk perception
2.89-3.08	Moderate risk perception
3.08-3.27	High risk perception

Source: Compiled from questionnaire

From table 2 and 3, the variables contributing relatively high towards the overall risk perception are mentioned in table 4

Table 4: Variables having relatively high risk perception

I have very little idea about the investment in mutual fund.
There is no certainty of income
There is no steady income
It is difficult to calculate income from investment from mutual fund
I do not understand the complex rules and regulations of mutual fund investment
It is difficult to understand the NAV fixation mechanism related to mutual fund
I feel less confident regarding time and NAV at which mutual fund are to be bought and sold for a best bargain
Pattern of change in the NAV of mutual fund de-motivates me in regards to the investment in mutual fund

Source: Compiled from questionnaire

From table 2 and table 3, variables with relatively moderate contribution towards overall level of risk perception are mentioned in table 5

Table 5: Variables having relatively moderate risk perception

It is very difficult to track the daily NAV movement of mutual fund of the companies
I do not have sufficient education required for investment in mutual fund
Others told me that investment in mutual fund is risky
I have seen others to suffer loss in mutual fund investment rather than amassing huge money
I doubt the integrity of the local agents.
In case of grievances I am not sure where I should register my protest and get my grievance redressed
Investment in mutual fund is very complex

Source: Compiled from questionnaire

From table 2 and table 3, variables with relatively low contribution towards overall level of risk perception are mentioned in table 6.

Table 6: Variables having relatively low risk perception

It is difficult to select type of mutual fund for investment.
Very often mutual fund related scandals are reported in papers and I am afraid of investing in mutual fund
It is very much likely to become a victim of fraud committed by other

Source: Compiled from questionnaire

Scale Statistics

Table 7: Scale Statistics

Mean	Variance	Std. Deviation	N of items
55.1718	195.262	13.97360	18

Source: Compiled from questionnaire

There are total 18 numbers of items in the considered scale. The respondents had been asked to rate these statements according to their risk perception on a five point Likert Scale. A score of 5, 4, 3, 2, 1 were given to each statement for the responses strongly agree, agree, neutral, disagree and strongly disagree respectively. Then a total score for risk perception has been found by adding the scores of all the statements related to risk perception. Maximum possible score of risk perception is 90 (18x5) and minimum 18

(18x1). The difference between maximum and minimum possible score is 72. In order to ascertain the risk perception at five points, this range is divided by 5. It is found 14.54. Adding 14.4 with 18 (lowest possible score), it is obtained the very low risk perception range (18-32.4). Similarly adding 14.4 with subsequent value, next higher range is obtained. In the following table risk perception score is interpreted.

Table 8: Interpretation of risk perception score

Scale value	Interpretation of scale value
18-32.5	Very low level
32.5-46.8	Low level
46.8-61.2	Moderate level
61.2-75.6	High level
75.6-90	Very high level

Source: Compiled from questionnaire

In the table 7 of scale statistics, it is seen that mean score is 55.1718 which falls in the moderate level. Thus it can be concluded that bank employees of Tripura have moderate level of risk perception regarding their investment in mutual fund.

Overall risk perception of all the respondent is calculated by adding their score in the likert scale. Then its value is interpreted using table 8. The overall level of risk perception is presented in the table 9.

Table9: Overall Risk perception

Level of risk perception	Frequency	Percent
Very High	11	4.2
High	97	37.0
Moderate	60	22.9
Low	77	29.4
Very low	17	6.5
Total	262	100.0

Source: Compiled from questionnaire

Table 9 shows that majority of bank employees in Tripura are having high level of risk perception.

Impact of risk perception on investment in mutual fund

To ascertain the impact of risk perception on mutual fund investment, ordinal logistic regression is used. Investment in mutual fund is considered as dependent variable and risk perception as calculated above is the predictor variable. Dependent variable is Mutual fund invested at present Y=1(not invested), Y=2(Less Than 25%), Y=3(25%-50%) and Y=4(More than 50%). Predictor variable is Risk perception of bank employees, X=1(Very high level of risk

perception), X=2(high level of risk perception), X=3(moderate level of risk perception) and X=4(low level of risk perception) and X=5 (very low level of risk perception)

As dependent variable is ordinal scale, linear regression model cannot be used as a good model in order to find the impact of risk perception on investment in mutual fund. In linear regression model dependent is metric scale (Interval or Ratio) (Hair et al, 2009). So, ordinal logistic regression is suitable for this case.

Table-10: Case Processing Summary

		N	Marginal Percentage
Investment in mutual fund at present	Not Invested	142	54.2%
	Less Than 25%	61	23.3%
	25%-50%	46	17.6%
	More than 50%	13	5.0%
Risk perception	Very high	11	4.2%
	High	97	37.0%
	Moderate	60	22.9%
	Low	77	29.4%
	Very low	17	6.5%
	Valid	262	100.0%
	Missing	0	
	Total	262	

Source: Compiled from the questionnaire

Table-11: Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	Df	Sig.
Intercept Only	161.439			
Final	46.875	114.564	4	.000

Link function: LogitSource: Compiled from the questionnaire

From the table 11, In order to explain the effects of each explanatory variable (risk perception) in the model, it is needed to determine whether the model improves the ability to predict the outcome. It has been done by comparing a model without any explanatory variables ('Intercept only' model) against the model with the explanatory variables (Risk perception) (the 'Final' model).It compared the final

model against the intercept only model to see whether it has significantly improved the fit to the data. The statistically significant chi-square statistic (p<.05) indicates that the Final model gives a significant improvement over the intercept-only model. This tells that the model gives better predictions

Table 12: Goodness-of-fit

	Chi-Square	Df	Sig.
Pearson	6.441	8	.598
Deviance	5.902	8	.658

Link function: LogitSource: Compiled from the questionnaire

Table 12 contains Pearson's chi-square statistic for the model (as well as another chi-square statistic based on the deviance). These statistics are used to test whether the observed data are consistent with the fitted model. The results indicates the model does fit very well as p value is higher than .05.

Table 13: Pseudo R-Square

Cox and Snell	.354
Nagelkerke	.396
McFadden	.194

Link function: LogitSource: Compiled from the questionnaire

In table 13, it is found that the Cox and Snell R2 value for the fitted ordinal logistic regression is 0.354 which does indicate a good fit.

Table 14: Parameter Estimates

		Parameter Estimates					95% Confidence Interval	
		Estimate	Std. Error	Wald	Df	Sig.	Lower Bound	Upper Bound
Proportion of total investment, invested in mutual fund (Threshold)	Not invested	-2.366	.494	22.949	1	.000*	-3.333	-1.398
	Less than 25%	-.756	.464	2.653	1	.103	-1.665	.154
	25%-50%	1.303	.483	7.288	1	.007*	.357	2.249
Risk perception	Very high	-4.590	1.128	16.554	1	.000*	-6.801	-2.379
	High	-3.795	.553	47.087	1	.000*	-4.879	-2.711
	Moderate	-2.955	.552	28.632	1	.000*	-4.038	-1.873
	Low	-.864	.501	2.975	1	.085**	-1.846	.118
	Very low	0 ^a	.	.	0	.	.	.

Source: Compiled from questionnaire

*Significant at 5% level of significant. ** Significant at 10% level of significant.

Table 14 investigates the estimated parameter. These are the ordered log-odds (logit) regression coefficients. It indicates that one unit increase in the predictor (risk perception), the dependent variable level is expected to change by its respective regression coefficient in the ordered log-odds scale while the other variables in the model are held constant. The threshold coefficients just represent intercept. Intercepts are tested whether they are zero or not. It is found from the above table that intercepts of 'not invested' level and '25%-50%' level are statistically significant at 5% level of significance. It indicates that Intercepts are not equal to zero. Only one intercept of 'less than 25% level' is zero. Beta coefficient of risk perception levels like 'very high level of risk perception', 'high level of risk perception' and 'moderate level of risk perception' are highly significant statistically at 5% level of significance as p value is less than .05 and beta coefficient for 'low level of risk perception' is significant at 10% level of significance as p value is less than 0.10. So, it is concluded that different levels of risk perceptions have significant impact on volume of investment in mutual fund. Estimated beta values are negative which indicates risk perception and invested in mutual fund is inversely related. If an investor's risk perception is reduced from high to low,

his investment volume will be increased from low level to high level. So, in order to increase the investment volume in Mutual Fund of the bank employees, proper awareness program should be arranged to reduce risk perception.

Conclusion

It is concluded from the above finding that risk perception and investment volume in mutual fund is inversely related. Investors who have high level of risk perception, are either not investing in mutual fund at all or investing in low volume. Individuals' investors adopt action in order to reduce risk when their risk perception increases (Lepesteur et al., 2008; Slovic et al., 1987; Slovic, 1987). This finding is consistent with the findings of Singh and Bhowal (2009) and Singh (2010).

Scope of future research

Risk perception and mutual fund investment behaviour is an upcoming area of research. In future, studies can be taken up to investigate the impact of awareness level about mutual fund, attitude towards mutual fund investment on the behaviour of investors in mutual fund. Impact of demographic variables on mutual fund investment can also be studied.

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