Chapter 4

Identification of determinants of investment in mutual fund

Introduction

Mutual fund becomes a popular investment vehicle for the common man who has no technical expertise in share market for investment. It is also suitable for the employees who want to appreciate their savings but do not get time to monitor modern investment vehicles such as share market (Lynch and Musto, 2003).

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 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; Sindhu and Kumar, 2014).

Since 1990, total mutual fund assets have been increased nearly sevenfold (Prathap and Rajamohan, 2013). The mutual fund makes saving and investing simple, easily reached and affordable (Kumar and Bansal, 2014).

India has one of the highest savings rates in the world which shows that Indians are having a high propensity to save. But most of the savings made by Indian households is in the form of bank deposits. Thus, the allocation of savings is a great cause for concern as very few proportion of Indian household invested in equity, mutual funds, and debentures (Bhushan, 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 behavioural 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).

Salaried employees are educated and aware of the current financial systems that make a significant impact while selecting the investment avenues (Palanivelu and Chandrakumar, 2013). It is found that salaried and self-employed of the north eastern region, are having a positive attitude towards investment in the mutual fund (Sikidar and Singh, 1996).

Investment is defined as gathering money into an asset with the expectation of capital appreciation, dividends, or interest earnings (Avadhani, 2006). Indians by investing their money in low-earning instruments and traditional financial products are not taking advantage of new age financial products which have the potential to generate higher returns due to lack of awareness level (Bhushan and Medury, 2013).

Chaturvedi and Khare (2012) found that awareness of Indians regarding traditional investment options is much higher than that for corporate securities, mutual funds, equity shares and preference shares. Thus, in order to strengthen our financial system, investors must be made aware of the characteristics of modern financial products.

Bank employees are considered as financially highly literate. Most of the banks have also started offering mutual funds. They are promoting mutual funds under the brand name of their own. Therefore, the attitude, risk perception and awareness level of bank employees towards mutual fund is a rising 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 his/her attitude, risk perception, and awareness level. Employees consider mutual fund as relatively less risky than a 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).

Every investor differs from the others in some respect or other due to various factors such as demographic and socio-economic factors. Salaried individuals have different investment decisions according to their demographic and socioeconomic variables (Bashir et al., 2013). At different levels of attitude, risk perception, awareness level, demographic and socio-economic variables the individual investors view differently about their investment and make decisions differently. In this situation, the present study is going to identify the determinants of investment in the mutual fund of bank employees in Tripura.

Objective

- To identify the determinants of investment in mutual fund by the bank employees in Tripura

The corollary objective of the chapter is as follows:

a. To analyze the degree of influence of identified determinants of investment in the mutual fund of bank employees in Tripura.

Hypotheses

The null hypotheses formulated for the chapter are given below.

a. H_{03}:There is no significant association between attitude of bank employees in Tripura towards mutual fund investment and their investment in mutual fund;

b. H_{04}: There is no significant association between risk perception of bank employees in Tripura towards mutual fund investment and their investment in mutual fund;

c. H_{05}: There is no significant association between awareness level of bank employees in Tripura with respect to investment in mutual fund and their investment in mutual fund.

In addition to these, following corollary hypotheses have been considered which are further extensions of H_{01} and H_{02}.

i. H_{011}: There is no significant association between demographic variables of bank employees of Tripura and their volume of investment in mutual fund;

ii. H_{021}: There is no significant association between socio-economic variables of bank employees of Tripura and their volume of investment in mutual fund;

Research questions

a. What is the overall attitude of bank employees in Tripura towards investment in the mutual fund?

b. What is the overall level of risk perception of bank employees in Tripura towards investment in the mutual fund?

c. What are the factors that affect the risk perception of bank employees in Tripura towards investment in the mutual fund?

d. What is the overall level of awareness about mutual fund investment among the bank employees in Tripura?

Attitude and investment

Numbers of studies have been conducted regarding the impact of attitude on investment. The investment decision is influenced by investor's attitude (Ajzen, 1991; Chandra and Kumar, 2011; Matthew et al., 2007). The study found that psychological factors have a direct impact on attitude towards investment made by individuals (Sehgal and Singh, 2012; Phan and Zhou, 2014). A decision of asset allocation in risky and riskless assets is affected by the risk-taking attitude of investors (Nosic and Weber, 2007). An investment decision on the stock market is influenced by an investor who is having a positive attitude (Kabita, 2015). The decision to change funds within a fund family was affected by investor's attitude towards risk (Lenard et al. 2003). Selection of investment avenues is depended on investor's attitude (Jothilingam and Kannan, 2011). From the above literature, it can be concluded that attitude of investors has influence on their investment.

Attitude and mutual fund investment

Investors have a positive attitude towards their investment made in mutual funds (Gaglani and Rao, 2014; Subramanian and Murthy, 2013; Parihar.et al., 2009; Singh and Vanita, 2002).Das (2012) has observed that of late many institutions are busy in providing wealth management services to the investors. However, these services are very costly. Therefore, mutual fund becomes popular for small and big investors as it is guided by professional fund managers. Mutual fund becomes popular investment tool that allows small investors access to a well-diversified portfolio of equities, bonds and other

securities (Kumar and Ahmed, 2012). Salaried employees have a positive attitude towards the mutual fund that leads to a high volume of investment (Murugan, 2012).

Measuring attitude related to investment

Attitude toward the investment is defined as one's general feelings signifying their favourableness or unfavourableness to the investment decision (Phan and Zhou, 2014). Attitude is identified to have an important impact on investment decision. Policy makers are interested in finding ways of measuring attitude level since it is an important component in any decision-making process. Singh (2012), Rathore, et al. (2014) Subramanya and Murthy (2013) asked respondents to rate their attitude level. They provide three options of attitude levels such as high, medium, low. Murugan (2012); Gaglani and Rao (2014) measured attitude providing the three options like positive, neutral and negative. The tools mentioned in the above literature to measure the attitude level of the investors towards mutual fund suffer from some limitations. First of all, three levels of attitude have to compromise some reliability. It is observed that respondents are not aware regarding their own appropriate attitude level towards mutual fund. It is also possible that some respondent may pretend to be of favourable attitude and opt for the option accordingly. So, present study measures the attitude level of employees towards mutual funds. The scale used in this study to measure attitude is different than that of other scales used by earlier researchers. Fourteen items were selected based on the literature review, own observations and consultation with the experts. Five options were given ranging from strongly agree to strongly disagree against the each item. After a pilot study, one item was deleted to improve reliability. Then from the thirteen items, five levels of attitude were developed which is shown in the section 4.15.3.

Impact of risk perception on investment

There have been various studies which have been conducted regarding the impact of risk perception on investment. It , 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 investments are influenced by risk perceptions (Sitkin and Weingart, 1995; Sitkin and Pablo, 1992; and Riaz et al., 2012). The risk is a vital factor that influences investors' investment decisions because it is the risk that determines an investor's probable return (Yang and Qiu, 2005). Investors perceptions exhibit significant changing over the course of the crisis, with risk tolerance and risk perceptions being less volatile than return expectations (Hoffmann, et al., 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 the mutual fund in order to have high gain at a low level of risk, safety liquidity (Rathnamani, 2013). From the above literature, it is evident that risk perception of investors has influence on their behaviour with respect to investment in mutual fund.

Risk perception and mutual fund investment

There are various traits that influence the investment decision of investors in the mutual fund. One such trait is risk perception (Weber and Milliman, 1997). While going for investment in risky assets such as mutual fund, people try to make a proper tradeoff between risks and return (Fischer and Jordan, 2006). In addition, 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). Investment in the mutual fund is an 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 over direct investment in equity shares among the employee investors. Risk perception and investment volume in the mutual fund is inversely related (Deb and Singh, 2016).

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 (Singh and Bhowal, 2008). This can be possible only if one is aware of 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 a relationship 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 chapter, 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 and Singh, 2012). In this study, several features of the 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.

Impact of awareness level on investment

Numbers of studies have been conducted regarding the impact of awareness level on investment. Awareness about the financial system of investors was found to be the significant factors while making investment decisions (Das, 2011; Talluru, 1997; Rajeswari, 2014). Investors are not investing high volume of their investment in modern investment instruments due to lack of awareness level of the products (Vidyakala et al., 2015). Geetha and Ramesh (2011) found that people were not aware of all the investment options available to them and they lack knowledge about securities and all these influences them not to invest modern investment avenues. The relatively higher level of knowledge and awareness level about the financial product among the individual investors lead to a higher volume of investment (Kumar and Rajkumar, 2014). Awareness about investments helps in increasing the investments (Imthiyas et al., 2015; Pellinen.et al. 2011). Kadariya et al. (2012) observed that fully aware equity investors have more chances of holding a high volume of equity investment. From the above literature, it is evident that awareness levels of investors have influence investment decision.

Awareness level and mutual fund investment

Jambodekar (1996) conducted a study to assess the awareness about mutual funds which is influencing the investment decision of the investors. Sundar (1998) found that the awareness about mutual fund concept was poor in small cities. A majority of the investors had stated that lack of awareness as the primary reason for not investing in mutual funds (Saibaba and Vipparthi, 2012; Junare and Patel, 2012; Umamaheswari and Kumar, 2013). Prathap and Rajamohan (2013) found that most of the investors have a high level of awareness and positive approach towards investing in mutual fund. Lack of awareness is the main reason for not investing in the mutual fund at Coimbatore city (Aravinth and Sudhakar; 2016).

Measuring awareness level related to investment

Awareness level measures the familiarity of the investors regarding a company, organization, product or service. Policy makers are interested in finding ways of measuring awareness level. It requires thorough knowledge and awareness to select the best investment opportunities in the market. This awareness is a continuous process (Imthiyas et al, 2015). It has been established from the earlier studies that if people are made aware regarding investment, they are able to make proper investment decisions. Bhushan(2014) asked respondents to rate their awareness level about the mutual fund. Bhushan(2014) has provided five options to his respondents as very low aware, low aware, neutral, highly aware and very highly aware. Rajeswari (2014) has provided only three options to measure awareness level towards mutual fund as highly aware, medium aware and low aware. Prathap and Rajamohan (2013) have used likert scale to measure

awareness level of mutual fund investors. Prathap and Rajamohan (2013) have used twenty items to assess the awareness of the respondents towards mutual funds on five point scale. The five points used against these twenty items were fully aware, somewhat aware, doubtful, and not aware and not at all aware. Singh and Kar (2010) have measured the awareness level of employees towards new pension scheme using the psychometric scale. Chaudhury and Pattnaik (2014) gave only two options as 'yes' and 'no' to assess awareness level towards operations of the mutual fund.

The tools mentioned in the above literature to measure the awareness of the investors towards mutual fund suffer from some limitations. It is observed that respondents are not aware regarding their own awareness level towards the mutual fund. Sometimes they may be confused about their own awareness of a product and do not know where to respond as their right option. It is also possible that some respondent may pretend to be more knowledgeable and opt for the option accordingly.

So, the present study measures the awareness level about mutual funds differently from the above-mentioned measurement scale. Awareness level is measured asking ten multiple choice questions related to the mutual fund investment which a customer is expected to know while making investment in mutual fund. All these questions are designed to measure awareness level as a latent variable.

Impact of demographic and socio-economic variables on investment

Several studies have been conducted highlighting the impact of demographic and socio economic variables on investment decision. Demographic and socio-economic factors of investors such as gender, age, education, family size, annual income, and

112

savings have much significant impact on the investment decisions (Shinde and Zanvar, 2015). Jain and Mandot (2012) found that demographic factors are having a significant impact on investment decisions of investors in Rajasthan, India. Walia and Kiran (2012) revealed that investors' investment decision is strongly influenced by demographic variables. Bhushan and Medury (2013) analyzed that gender has an impact on investment decision of employees working in various universities of Himachal Pradesh, India. Socio-demographic variables such as gender and age influence investors' decision-making (Graham, Harvey and Huang, 2009).There is a positively strong relationship between income and investment decisions (Ramanathan and Meenakshisundaram, 2015). Demographic variables such as age, gender and education play a very important role in investment decisions (Jamshidinavid et. al., 2012; Geetha and Ramesh, 2011). Demographic variables such as gender, age, for the underlying psychological processes, drive investors' decision-making (Graham, Harvey, and Huang, 2009). Anderson and Bhattacharya (2011) found that demographic variables such as gender, qualification and age are important in guiding investment decision. Girdhari and Satya (2011) analyzed that investment decisions of investors depend on their age, sex, income, marital status and education.

Investment decision of individual is significantly influenced by their demographic and socio-economic variables such as gender (Jianakoplos and Bernasek, 1998; Sunden and Surette,1998; Prince ,1993; Powell and Ansic ,1997; Bajtelsmit and Bernasek, 1996). age (Alexander et al. 1998; Higgins, 1998; Singh and Bhattacharjee,2010) income (Walia and Kiran,2009; Callahan et al., 2004; Watson and McNaughton, 2007) marital status (Arano et al., 2010; Grable and Roszkowski, 2007;Lazzarone, 1996), educational level

(Das, 2011;Bellante and Green, 2004; Al-Ajmi, 2008; Gilliam and Chatterjee, 2011), experience(Corter and Chen, 2006; Wilcox,2003; Engström,2007).

Important determinants of investment in mutual funds have been identified from the above literature which influences investment decisions in the mutual fund. It is found that attitude, risk perception, and awareness level are important determinants of investment in mutual fund. It is also found that different demographic and socio-economic variables such as age, gender, income, marital status, education, and experience have an influence on mutual fund investment decision. So, total nine determinants namely attitude, risk perception, awareness level, gender, age, marital status, family income, education, and experience have been identified. An empirical examination of the selected variables on the determinants of investment by bank employees in mutual funds was undertaken in the following paragraphs.

Analysis and findings

Analysis and findings of the empirical examination of the present study are given in the following paragraphs:

Reliability of the tool for measuring attitude

Table 4.1: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.924	.925	13

Source: Compiled from questionnaire

The reliability of the scale is performed and coefficient of Cronbach's Alpha was found to be 0.924 for 13 items (or statements) considered for the study. A very high value of Cronbach's Alpha (0.924) is indicative of a 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 a good measure of the reliability of scale (Nunnaly, 1978).

Measuring attitude of the bank employees

The items statistics for the attitude of bank employees to the various items considered for the study are presented in table 4.2.

Table 4.2: Item Statistics

Particulars	Mean	Std. Deviation
Mutual fund is good investment avenues for tax saving	3.7519	0.94863
Mutual fund investing is the best way to invest in equity shares	3.6641	0.91485
Investment in mutual fund is easier than any other mode of investment	3.6412	0.94742
It is recommended to others for investment in mutual fund	3.6145	1.02846
Investing in mutual fund is not gambling	3.6107	1.02887
Redemption from mutual fund is easy	3.5763	0.91386
Return from mutual fund is adequate	3.5496	0.86847
Eagerness to listen if some agent explains regarding mutual fund	3.4962	0.93771
Regularly gather information on mutual fund	3.4275	0.97108
The mutual fund schemes are adequate to cater to the need of every investor in stock market	3.4160	0.94616
Mutual fund is better investment option than bank fixed deposit	3.4122	1.09943
Risk involved with mutual fund is manageable	3.3969	0.96434
Some time is spent on monitoring mutual fund performance	3.3893	1.00628

Source: Compiled from questionnaire

Scale Statistics

Table 4.3: Scale Statistics

Mean	Variance	Std. Deviation	N of items
45.9466	82.886	9.10418	13

Source: Compiled from questionnaire

115

The respondents had been asked to rate these statements according to their attitude on a five point Likert Scale. A score of 1, 2, 3, 4 and 5 was given to each statement for the responses strongly disagree, disagree, neutral, agree and strongly agree, respectively. Then a total score for attitude has been found by adding the scores of all the statements related to attitude. There were 13 items considered to measure the attitude of bank employees towards mutual funds. The maximum score possible for a respondent was 65[13X5] and minimum score possible was 13 [13X1].The difference between the maximum possible score and the minimum possible score was 52. In order to make five point scale to measure the attitude of an individual investor, this range is divided by 5 and 10.4 was found. Adding 10.4 with 13 (minimum possible score), the score interval for highly unfavourable attitude was obtained which comes out to be 13-23.4.Similarly adding 10.4 with subsequent values, next higher range was obtained. In the following table, attitude score is interpreted

Table 4.4: Interpretation of attitude score

Scale value	Interpretation of scale value
13-23.4	Very unfavourable
23.4-33.8	Unfavourable
33.8-44.2	Neutral
44.2-54.6	Favourable
54.6-65	Very favourable

Source: Compiled from questionnaire

From the table4.3, it is observed that mean score is 45.9466 which falls under favourable range. Thus it can be concluded that bank employees have a favourable attitude towards their investment in mutual fund.

The overall attitude of all the respondents was calculated by adding their score in the likert scale. Then its value is interpreted according to the interpretation table given in table4.4. The overall level of attitude is presented in table 4.5.

Table4.5: Overall attitude

Level of attitude	Number of employees	Percent
Highly favorable	21	8.0%
Favorable	129	49.2%
Neutral	45	17.2%
Unfavorable	43	16.4%
Highly unfavorable	24	9.2%
Total	262	100%

Source: Compiled from questionnaire

Table 4.5 shows that maximum of bank employees in Tripura are having favourable attitude levels towards investment in mutual fund.

Reliability of the tool for measuring risk perception

Table 4.6: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.901	0.939	18

Source: Compiled from questionnaire

The reliability of the scale was 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 a 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 a good measure of the reliability of scale (Nunnaly, 1978).

Measuring risk perception: Item statistics

The items statistics for the risk perception of bank employees to the various items considered for the study is presented in table4.7.

Table 4.7: Item Statistics

Particulars	Mean	Std. Deviation
The Very little idea about the investment in mutual fund.	3.2786	1.11187
There is no steady income	3.271	0.96641
It is difficult to calculate income from investment from mutual fund	3.2176	1.00687
Pattern of change in the NAV of mutual fund de-motivates me in regards to the investment in mutual fund	3.2137	3.31028
There is no certainty of income	3.1641	0.97859
less confident is felt regarding time and NAV at which mutual fund are to be bought and sold for the best bargain	3.1641	1.00942
It is difficult to understand the NAV fixation mechanism related to mutual Fund	3.1527	1.04293
It is not understood the complex rules and regulations of mutual fund investment	3.145	1.01424
Others told me that investment in mutual fund is risky	3.0649	0.99788
There is a doubt the integrity of the local agents.	3.0305	1.0204
It is seen that others to suffer the loss in mutual fund investment rather than amassing huge money.	3.0076	0.97475
In case of grievances, it is not sure where to complaint should be registered and get the grievance redressed	3.0076	1.06491
Investment in mutual fund is very complex	3.0038	1.0339
It is very difficult to track the daily NAV movement of mutual fund of the companies	3.0012	1.11761
Required education for investment in mutual fund is not sufficient	2.9695	1.10338
It is difficult to select a type of mutual fund for investment.	2.8893	1.04641
Very often mutual fund related scandals are reported in papers and it makes 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

Measuring risk perception: Scale statistics

Table 4.8: 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. A maximum possible score of risk perception was 90 (18x5) and a minimum possible score of risk perception was 18 (18x1). The difference between maximum and minimum possible score was 72. In order to ascertain the risk perception at five levels, this range was divided by 5. It was found to be 14.54. Adding 14.4 with 18 (lowest possible score), the score interval for a very low level of risk perception range (18-32.4) was obtained. Similarly, adding 14.4 with subsequent value, next higher range were obtained. In the following table, risk perception score is interpreted.

Table 4.9: 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 table 4.8 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 a moderate level of risk perception regarding their investment in mutual fund.

Overall risk perception of the entire respondent was calculated by adding their score in the likert scale. Then its value was interpreted using table 4.9. The overall level of risk perception is presented in the table 4.10.

Table 4.10: Overall risk perception

Level of risk perception	No. of employees	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 4.10 shows that highest numbers of bank employees in Tripura are having a high level of risk perception.

Measuring awareness level of the bank employees

To measure the level of awareness of bank employees in respect of investment in the mutual fund, 10 numbers of items were chosen. For these items, there are total 10 numbers of questions were framed in the questionnaire. The respondents had been asked to tick on the right option. Each question carries a score of one. Then a total score has been found by adding the scores of all the questions related to awareness level. A maximum possible score of awareness level is 10(10x1) and minimum zero (10X0). The difference between maximum and minimum possible score is 10. In order to ascertain the awareness level at five points, this range is divided by 5. It is found to be 2. Adding 2 with 0 (lowest possible score), the interval of very low level of awareness (0-2) was obtained. Similarly adding 2 with subsequent values, next higher range was obtained. In the following table, awareness level score is interpreted.

Table 4.11: Interpretation of awareness level score

Score value	Interpretation of score value
0-2	Very low level of awareness
2-4	Low level of awareness
4-6	Moderate level of awareness
6-8	High level of awareness
8-10	Very high level of awareness

Source: Compiled from questionnaire

The overall awareness level of all the respondents was calculated by adding their scores from the questionnaire. Then its value is interpreted using table 4.11. The overall awareness level of bank employees in Tripura towards mutual fund is presented in the table 4.12.

Table 4.12: Overall awareness level

Level of awareness level	Frequency	Percent
Very High level of awareness	44	16.8%
High level of awareness	75	28.6%
Moderate level of awareness	45	17.2%
Low level of awareness	63	24.0%
Very low level of awareness	35	13.4%
Total	262	100.0

Source: Compiled from questionnaire

Table 4.12 shows that majority of bank employees in Tripura are having a high level of awareness towards the mutual fund.

Identification of factors affecting investment in mutual fund

Nine variables have been identified as determinants of investment in mutual funds. It was identified from the literature review. These variables were considered as predictor variables. There exist multicollinearity effects among the predictor variables which was not expected to give a good result for a regression model. In order to avoid the

multicollinearity effect, factor analysis has been used. In order to extract the factors and also to avoid the cross loading among the factors of the variables eigenvalue criteria (greater than one) and varimax rotation, criteria have been used respectively. Sample adequacy has been checked using KMO test. It was showing the satisfactory result as the sample adequacy was 0.661 which means that a number of samples collected were enough for study and Bartlett's test of sphericity was highly significant which indicates that sufficient correlations were there among the variables to proceed. The table 4.13 below shows the summary results of the sample adequacy.

Table 4.13: Result of KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.661
Bartlett's Test of Sphericity	Approx. Chi-Square	547.048
	D.F	21
	Significance	.000

Source: Compiled from questionnaire

Table 4.14: Communalities

Determinants	Initial	Extraction
Age	1.000	.803
Family income	1.000	.550
Education	1.000	.150
Experience	1.000	.826
Risk perception	1.000	.716
Attitude	1.000	.676
Awareness level	1.000	.579

Source: Compiled from questionnaire

Communality shows how much variance is explained by each variable in the factor analysis with respect to factors derived (Mishra; 2015). Variables which were having communalities greater than 0.50 were to be retained in the analysis (Hair et al; 2009). In the table 4.14, only education has the communalities less than 0.5. So, education has been dropped from the analysis.

Table 4.15: 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	2.406	34.374	34.374	2.406	34.374	34.374	2.209	31.558	31.558
2	1.896	27.079	61.453	1.896	27.079	61.453	2.093	29.895	61.453
3	.944	13.480	74.933						
4	.594	8.493	83.426						
5	.545	7.780	91.206						
6	.401	5.732	96.938						
7	.214	3.062	100.000						

Source: Compiled from questionnaire

In the second step, the summary of the extracted factors and the total variance explained by the total number of extracted factors have been presented. It should be noticed that these extracted factors are obtained after avoiding the cross loadings. It was found that three factors were loaded and with the help of these three factors, 61.453% variance can be explained. Details description of the variables loaded in different factors is presented in table 4.15.

In the table 4.16, the results of rotated component matrix are shown. In this case, the variables were loaded under two factors and on the basis of the arrangement, factors are named as the demographic and socio-economic factor, and psychological factor.

Table 4.16: Varimax rotated loading

Factors and Variables	Factor1	Factor2
Demographic and socio-economic variables		
Age	.884	
Family income	.708	
Experience	.907	
Psychological factor		
Risk perception		-.826
Attitude		.822
Awareness level		.745

Source: Compiled from questionnaire

It is found that two factors namely demographic and socio-economic variables and psychological factor have been identified by the factor analysis. Factor 1 was named as demographic and socio-economic variables of investors. It consists of variables such as age, family income, and experience. Other two demographic variables such as gender and marital status were not suitable for factor analysis because they were measured by a nominal scale.

Factor 2 is named as the psychological factor. It consists of variables such as risk perception, attitude and awareness level.

Impact of identified determinants of investment in mutual fund

To ascertain the impact of determinants of mutual fund investment, ordinal logistic regression has been used. Investment in the mutual fund is considered as a dependent variable. Thus, the dependent variable was the investment in the mutual fund at present. It is denoted as Y=1(Not invested in the mutual fund), Y=2(Less than 25% investment in mutual fund out of total investment), Y=3(25%-50% investment in mutual fund out of total investment) and Y=4(More than 50% investment in mutual fund out of total investment). Predictor variables such as factor1score (Age, family income, experience) and factor2 score (Attitude, risk perception, and awareness level) were derived from factor analysis and other predictors variables were gender, marital status and education level which was not considered in factor analysis due to their nominal

scale measurement. These were coded in SPSS as Gender=1(Male), Gender=2(female); Education=1(Graduate), Education=2(Postgraduate), Marital status=1(Married), Marital status=2(Unmarried).

Since dependent variable is on the ordinal scale, the linear regression model cannot be used as a good model in order to find the impact of considered independent variables on investment in mutual fund. The Linear regression model is suitable if dependent variable happens to be on the metric scale (Interval or Ratio) (Hair et al. 2009). So, ordinal logistic regression is suitable for this case.

Table 4.17: Model fitting information

Model	-2 Log Likelihood	Chi-Square	Df	Sig.
Intercept Only	575.809			
Final	380.519	195.290	10	.000

Source: Compiled from the questionnaire

From the table 4.17, in order to explain the effects of each explanatory variable in the model, it is needed to determine whether the Likert 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 (the 'Final' model). 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 4.18: Goodness-of-fit

	Chi-Square	Df	Sig.
Pearson	660.737	719	.941
Deviance	367.571	719	1.000

Source: Compiled from the questionnaire

Table 4.18 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 indicate that the model does fit very well as p-value is higher than 0.05.

Table 4.19: Pseudo R-Square

Cox and Snell	.525

In table 4.19, it is found that the Cox and Snell R^2 value for the fitted ordinal logistic regression is 0.525 which does indicate a good fit.

Table 4.20: Parameter Estimates

		Parameter Estimates				
		Estimate	Std. Error	Wald	Df	Sig.
Proportion of total investment, invested in mutual fund (Threshold)	Not invested	1.276	.610	4.376	1	.036
	Less than 25%	3.316	.651	25.933	1	.000
	25%-50%	5.747	.735	61.165	1	.000
Determinants	[Gender=1.00]	.148	.402	.135	1	.713
	[Gender=2.00]	0[a]	.	.	0	.
	[Marital Status=1.00]	.735	.601	1.493	1	.222
	[Marital Status=2.00]	0[a]	.	.	0	.
	[Education=1.00]	2.700	.627	18.551	1	.000
	[Education=2.00]	0[a]	.	.	0	.
	Factor1	1.764	.713	6.125	1	.013
	Factor2	-1.957	.258	57.621	1	.000
Interaction effects	[Education=1.00] * Factor1	1.366	.408	11.206	1	.001
	[Education=2.00] * Factor1	0[a]	.	.	0	.
	[Marital Status=1.00] * [Education=2.00]	-2.637	.787	11.215	1	.001
	[Marital Status=1.00] * [Education=2.00]	0[a]	.	.	0	.
	Factor1*Factor2	2.040	.705	8.360	1	.004
	[MaritalStatus=1.00] * Factor1	-1.949	.705	7.639	1	.006
	[MaritalStatus=2.00] * Factor1	0[a]	.	.	0	.
	[MaritalStatus=1.00] * Factor1* Factor2	-1.933	.763	6.409	1	.011
	[MaritalStatus=2.00] * Factor1* Factor2	0[a]	.	.	0	.

Table 4.20 investigates the estimated parameters. These are the ordered log-odds (logit) regression coefficients. It indicates that when one unit increases in the predictors (determinants), 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 all the intercepts are statistically significant at 5 % level of significance. It indicates that intercepts are not equal to zero. Beta coefficient of determinants like factor1 (Age, family income, experience) and factor2(Attitude, risk perception, and awareness level) and education are significant at 5% level of significance as p-value is less than 0.05 and beta coefficient for gender and marital status are not significant at 5% level of significance as p-value is more than 0.05.

So important determinants of investments in the mutual fund for bank employees are age, family income, experience, risk perception, attitude and awareness level. Apart from these variables, few interaction effects are also considered as determinants towards investments in the mutual fund. It has been found that, if factor 1 (Age, family income and experience) and factor 2 (Risk perception, attitude, awareness level) remains constant, only change in marital status (unmarried to married) reduces the volume of investment in mutual funds. But, on the other hand, if factor 1(Age, family income and experience) and factor 2 (Risk perception, attitude, awareness level) remain constant, changes in the level of educational leads to a relatively higher volume of investment in mutual fund. The interaction between factor1 (Age, family income and experience) and factor2 (Risk perception, attitude, awareness level) and interaction between educational

level and marital status are also positively related towards volume of investment in mutual fund.

Impact of attitude on investment in mutual fund

To ascertain the impact of attitude on mutual fund investment, ordinal logistic regression is used. Investment in mutual fund is considered as dependent variable and attitude as calculated above is the predictor variable. The dependent variable is investment in mutual fund at present. It is coded in the SPSS as Y=1(Not invested in mutual fund), Y=2(Less than 25% investment in mutual fund out of total investment), Y=3(25%-50% investment in mutual fund out of total investment) and Y=4(More than 50% investment in mutual fund out of total investment). Predictor variable is attitude of bank employees which is denoted as, X=1(Very favorable attitude), X=2(Favorable attitude), X=3(Neutral level of attitude) and X=4(Unfavorable attitude) and X=5 (Very unfavorable attitude).

Table 4.21: 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%
Attitude	Very favorable	21	8.0%
	Favorable	129	49.2%
	Neutral	45	17.2%
	Unfavorable	43	16.4%
	Very unfavorable	24	9.2%
	Valid	262	100.0%
	Missing	0	
	Total	262	

Source: Compiled from the questionnaire

Table 4.22: Model fitting information

Model	-2 Log Likelihood	Chi-Square	Df	Sig.
Intercept Only	140.156			
Final	42.883	97.273	4	.000

Source: Compiled from the questionnaire

From the table 4.22, In order to explain the effects of each explanatory variable (attitude) 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 (attitude) (the 'Final' model). It is 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 4.23: Goodness-of-fit

	Chi-Square	Df	Sig.
Pearson	5.777	8	0.672
Deviance	6.970	8	0.540

Source: Compiled from the questionnaire

Table 4.23 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 indicate the model does fit very well as p-value is higher than 0.05.

Table 4.24: Pseudo R-Square

Cox and Snell	0.310

Source: Compiled from the questionnaire

129

In table 4.24, it is found that the Cox and Snell R^2 value for the fitted ordinal logistic regression is 0.310 which does indicate a good fit.

Table 4. 25: 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	3.146	1.026	9.396	1	0.002*	1.135	5.158
	Less than 25%	4.558	1.039	19.235	1	0.000*	2.521	6.595
	25%-50%	6.601	1.077	37.567	1	0.000*	4.490	8.711
Attitude	Very high favorable	5.525	1.121	24.292	1	0.000*	3.328	7.722
	High favorable	3.759	1.042	13.018	1	0.000*	1.717	5.801
	Neutral	2.057	1.081	3.619	1	0.057**	-.062	4.177
	Unfavorable	1.482	1.107	1.791	1	0.181	-.688	3.652
	Very unfavorable	0[a]	.	.	0	.		

Source: Compiled from questionnaire

*Significant at 5% level of significant. ** Significant at 6% level of significant.

Table 4.25 investigates the estimated parameters. It is found from the above table that all the intercepts are statistically significant at 5 % level of significance. It indicates that Intercepts are not equal to zero. Beta coefficient of attitude level such as very high favorable and high favorable are significant at 5% level of significance since p-value is less than 0.05 and beta coefficient for neutral level is significant at 6% level of significance as p-value is less than 0.06. But unfavorable level of beta coefficient is not significant. Estimated beta values are positive which indicates favourable attitude and invested in mutual fund is directly related. If an investor's attitude is increased from unfavourable to favourable, his/her investment volume in mutual fund will be increased from low level to high level. So, it can be concluded that different levels of attitude have significant impact on volume of investment in mutual fund. Beta coefficient is found

highest, i.e., 5.525 which indicates if an investor's attitude level is increased by one unit from very unfavorable (reference level)to very favourable level , his/her investment volume will be increased from low level to high level at the highest rate.

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 in mutual fund), Y=2(Less than 25% investment in mutual fund out of total investment), Y=3(25%-50% investment in mutual fund out of total investment) and Y=4(More than 50% investment in mutual fund out of total investment). Predictor variable is risk perception of bank employees which is denoted as 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).

Table 4.26: 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

131

Table 4.27: Model fitting information

Model	-2 Log Likelihood	Chi-Square	Df	Sig.
Intercept Only	161.439			
Final	46.875	114.564	4	0.000

Source: Compiled from the questionnaire

From the table 4.27, 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 ($p<0.05$) indicates that the final model gives a significant improvement over the intercept-only model. It tells that the model gives better predictions

Table 4.28: Goodness-of-fit

	Chi-Square	Df	Sig.
Pearson	6.441	8	0.598
Deviance	5.902	8	0.658

Source: Compiled from the questionnaire

Table 4.28 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 indicate the model does fit very well as p-value is higher than 0.05.

Table 4.29: Pseudo R-Square

Cox and Snell	0 .354

Source: Compiled from the questionnaire

132

In table 4.29, it is found that the Cox and Snell R^2 value for the fitted ordinal logistic regression is 0.354 which does indicate a good fit.

Table 4.30: 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	0.000*	-3.333	-1.398
	Less than 25%	-.756	.464	2.653	1	0.103	-1.665	.154
	25%-50%	1.303	.483	7.288	1	0.007*	.357	2.249
Risk perception	Very high	-4.590	1.128	16.554	1	0.000*	-6.801	-2.379
	High	-3.795	0.553	47.087	1	0.000*	-4.879	-2.711
	Moderate	-2.955	0.552	28.632	1	0.000*	-4.038	-1.873
	Low	-.864	0.501	2.975	1	0.085**	-1.846	0.118
	Very low	0[a]	.	.	0	.		

Source: Compiled from questionnaire

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

Table 4.30 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 0.05 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/her investment volume will be increased from low level to high level. So, in order to increase the volume of investment in mutual fund by the bank employees, proper awareness program should be arranged to reduce risk perception.

Identification of factors affecting risk perception of the investors

Factor analysis has been carried out for extracting the factors. In order to extract the factors and also to avoid the cross loading among the factors of the variables eigen value criteria (greater than one) and varimax rotation, criteria have been used respectively. Sample adequacy has been checked using KMO and Bartlett's test which is highly satisfactory as the sample adequacy is 0.937. This shows that a number of samples collected are adequate for the study. The table 4.31 shows the summary results of the sample adequacy.

Table 4.31: Result of KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.937
Bartlett's Test of Sphericity	Approx. Chi-Square	2797.514
	D.F	153
	Significance	0.000

Source: Compiled from questionnaire

Table 4.32: 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	9.015	50.084	50.084	9.015	50.084	50.084	4.792	26.621	26.621
2	1.172	6.510	56.595	1.172	6.510	56.595	4.040	22.444	49.065
3	1.004	5.577	62.172	1.004	5.577	62.172	2.359	13.107	62.172
4	0.862	4.790	66.961						
5	0.796	4.424	71.386						
6	0.654	3.634	75.020						
7	0.550	3.054	78.074						
8	0.541	3.008	81.082						
9	0.507	2.818	83.900						
10	0.496	2.755	86.655						
11	0.414	2.300	88.955						
12	0.392	2.180	91.135						
13	0.379	2.106	93.242						
14	0.315	1.753	94.994						
15	0.278	1.542	96.536						
16	0.239	1.327	97.863						
17	0.222	1.233	99.096						
18	0.163	.904	100.00						

Source: Compiled from questionnaire

In the second step, summary of the extracted factors and the total variance explained by a total number of extracted factors have been presented. It should be noticed that these extracted factors are obtained after avoiding the cross loadings. It is found that three factors are loaded and with the help of those three factors which explains 62.172% variance. Details description of the variables loaded in different factors is presented in table 4.32. In the table 4.33, the results of rotated component matrix are shown. In this case, the variables are loaded under three factors and on the basis of the arrangement, factors are named as fear psychosis, investor's lack of knowledge, and investor's lack of confidence.

Table 4.33: Varimax Rotated Loading

Factors and Variables	Factor 1	Factor 2	Factor 3
Investors fear psychosis			
V6 Investment in mutual fund is very complex	0.487		
V7 It is very much likely to become a victim of fraud committed by other	0.596		
V13 Sufficient education is required for investment in mutual fund	0.529		
V14 Others told me that investment in mutual fund is Risky	0.657		
V15 Very often mutual fund related scandals are reported in papers and it makes afraid of investing in mutual fund	0.762		
V16 It is seen that others to suffer loss in mutual fund investment rather than amassing huge money	0.727		
VI7 There is a doubt the integrity of the local agents.	0.707		
V18 In case of grievances it is not sure where it should register the protest and get the grievances redressed	0.80		
Investor's lack of knowledge			
V1 Very little idea about the investment in mutual fund.		0.437	
V2 There is no certainty of income		0.830	
V3 There is no steady income		0.859	
V4 It is difficult to calculate income from investment from mutual fund		0.682	
V8 It is difficult to select type of mutual fund for Investment		0.534	
V9 It is difficult to understand the NAV fixation mechanism related to mutual fund		0.552	
Investor lack of confidence			
V5 It is not understood the complex rules and regulations of mutual fund investments			0.510
V10 It is felt less confident regarding time and NAV at which mutual fund are to be bought and sold for the best bargain			0.499
V11 Pattern of change in the NAV of mutual fund de-motivates me in regards to the investment in mutual fund			0.785
V12 It is very difficult to track the daily NAV movement of mutual fund of the companies			0.471

Source: Compiled from questionnaire

It is found that three factors namely fear psychosis, investor's lack of knowledge, and investor's lack of confidence are identified by the factor analysis. Factor 1 which is named as fear psychosis consists of variables like complexity of investment in mutual fund, likelihood of a victim of fraud committed by others, not having sufficient education required for investment in mutual fund, other people's opinion that investment in mutual fund is risky, reporting of mutual fund related scandals, seeing others suffer loss in mutual fund investment rather than amassing huge money, doubting the integrity of the local agents and not sure about the place to register once grievance to get it redressed.

Factor 2 is named as investor's lack of knowledge. It consists of variable like having little idea about the investment in mutual fund, no certainty of income, not having steady income, difficulty in calculating income from investment from mutual fund, difficulty in selecting type of mutual fund for investment and difficulty in understanding the NAV fixation mechanism related to mutual fund

Factor 3 is branded as investor lack of confidence. It includes variables like not understanding the complex rules and regulations of mutual fund investment, feeling less confident regarding time and NAV at which mutual fund are to be bought and sold for the best bargain, de-motivation due to the pattern of change in the NAV of mutual fund, difficulty in tracking the daily NAV movement of mutual fund of the company.

Impact of identified factors affecting risk perception on investment decision in mutual fund

To ascertain the impact of factors affecting risk perception of bank employees towards investment in mutual fund, binary logistic regression is used. Investment in

mutual fund is considered as dependent variable and three factors affecting risk perception as calculated in table 4.33 are the predictor variables. The dependent variable is investment in mutual fund at present, i.e., Y=0(Invested in mutual fund) and Y=1(Not invested in mutual fund). Predictor variables are identified factors affecting risk perception of bank employees. There is fear psychosis of investors, investor's lack of knowledge and investor's lack of confidence.

As dependent variable is nominal scale and dichotomous, linear regression model cannot be used as a good model in order to find the impact of identified factors affecting risk perception on investment in mutual fund. The Linear regression model is suitable if dependent variable is on metric scale (Interval or Ratio) (Hair et al., 2009). So, binary logistic regression is suitable for this case. Moreover, it does not require normality assumption. Thus, the model is explained as follows:

P(Y=1) is the probability of not investing in mutual fund

And P(Y=0) is the probability of investing in mutual fund.

$P(Y = 1) = 1 - P(Y = 0)$

Here $P(Y = 1)$ must lie between 0 and 1.

Regression model will be predicting the logit, is given below:

Ln(ODD)=ln{P(Y=1)/(1-P(Y=1)}= a+b1(fear psychosis of investors) +b2(Investor's lack of knowledge) +b3(Investor's lack of confidence)

Table 4.34: Omnibus Tests of Model Coefficients

	Chi-square	Df	Sig.
Step	76.532	3	0.000
Block	76.532	3	0.000
Model	76.532	3	0.000

Source: Compiled from questionnaire

From the table 4.34, it is seen that Omnibus tests of model coefficients are significant as p-value is less than 0.05. This indicates that adding variables like fear psychosis of investors, investor's lack of knowledge and investor's lack of confidence in the model have significantly increased the ability of the model to predict the decisions made by investors.

Table 4.35: Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	283.235[a]	.253	0.339

Source: Compiled from questionnaire

From the table 4.35, the Cox and Snell R^2 value for the fitted binomial logistic regression is 0.253 which does indicate a good fit.

Table 4.36: Variables in the Equation

Factors of risk perception	B	S.E.	Wald	Df	Sig.	Exp(B)
Fear psychosis of investors	1.037	.166	38.798	1	.000*	2.820
Investor's lack of knowledge	.490	.153	10.286	1	.001*	1.632
Investor's lack of confidence	.629	.187	11.313	1	.001*	1.875
Constant	.294	.146	4.061	1	.044*	1.342

Source: Compiled from questionnaire

The variables in the equation output show us that the regression equation is:

ln (ODD) = ln{P(Y=1)/(1-P(Y=1)}= 0.294 +1.036(fear psychosis of investors) + 0.490 (Investor's lack of knowledge) +0.629(Investor's lack of confidence)

Table 4.36, investigates the estimated parameter. These are the ordered log-odds (logit) regression coefficients. It indicates that one unit increase in (factors of risk perception), the dependent variable is expected to change from 'yes' to 'no' by its respective regression coefficient in the ordered log-odds scale while the other variables in the model are held constant.

It is seen that all the factors of risk perception (fear psychosis of investors, investor's lack of knowledge and investor's lack of confidence) have significant impact on investment decision on investment decision in mutual fund at 5% level of significance. Investors' investment in mutual fund is influenced by three factors. Among these three factors, fear psychosis of investors is playing highest role followed by investor's lack of confidence and investor's lack of knowledge based on their respective beta values which are mentioned in table 4.36.

Impact of awareness level on investment in mutual fund

To ascertain the impact of awareness level on mutual fund investment, ordinal logistic regression is used. Investment in mutual fund is considered as dependent variable and awareness level as calculated above is the predictor variable. Dependent variable is mutual fund invested by the bank employees at present Y=1(not invested in mutual fund),

Y=2 (Less than 25% of total investment in mutual fund),

Y=3 (25%-50% of investment in mutual fund out of total investment) and

Y=4 (More than 50% of investment in mutual fund out of total investment).

Predictor variable is awareness level of bank employees. It is given as:

X=1(Very high level of awareness),

X=2(high level of awareness),

X=3(moderate level of awareness),

X=4(low level of awareness) and

X=5 (very low level of awareness).

Table 4.37: Case processing summary

		N	Marginal Percentage
Investment in mutual fund at present	Not Invested in mutual fund	142	54.2%
	Less than 25% of total investment in mutual fund	61	23.3%
	25%-50% of total investment in mutual fund	46	17.6%
	More than 50% of total investment in mutual fund	13	5.0%
Awareness level	Very high level of awareness	44	16.8%
	High level of awareness	75	28.6%
	Moderate level of awareness	45	17.2%
	Low level of awareness	63	24.0%
	Very low level of awareness	35	13.4%
	Valid	262	100.0%
	Missing	0	
	Total	262	100.0%

Source: Compiled from the questionnaire

Table 4.38: Model fitting information

Model	-2 Log Likelihood	Chi-Square	Df	Sig.
Intercept Only	265.904			
Final	51.360	214.544	4	0.000

Source: Compiled from the questionnaire

From the table 4.38, In order to explain the effects of each explanatory variable (awareness level) 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 (awareness level) (the 'Final' model). It is compared with 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 4.39: Goodness-of-fit

	Chi-Square	Df	Sig.
Pearson	19.530	8	0.012
Deviance	21.574	8	0.006

Link function: LogitSource: Compiled from the questionnaire

Table 4.39 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 result indicates the model does fit well at 1% level of significant as p-value is higher than 0.01.

Table 4.40: Pseudo R-Square

Cox and Snell	0.559

Source: Compiled from the questionnaire

In table 4.40, it is found that the Cox and Snell R^2 value for the fitted ordinal logistic regression is 0.559 which does indicate a good fit.

Table 4.41: 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	3.529	1.016	12.067	1	.001*	1.538	5.521
	Less than 25%	5.794	1.053	30.278	1	.000*	3.730	7.858
	25%-50%	8.026	1.093	53.940	1	.000*	5.884	10.167
Awareness level	Very high level of awareness	6.673	1.093	37.267	1	.000*	4.531	8.816
	High level of awareness	5.218	1.057	24.378	1	.000*	3.147	7.290
	Moderate level of awareness	2.142	1.082	3.921	1	.048*	.022	4.263
	Low level of awareness	1.069	1.119	.913	1	.339	-1.123	3.261
	Very low level of awareness	0[a]	.	.	0	.		

Source: Compiled from questionnaire

*Significant at 5% level of significant.

Table 4.41 investigates the estimated parameter. It, from the above table, that all the intercepts are statistically significant at 5% level of significance. It indicates that intercepts are not equal to zero. Beta coefficient of awareness levels such as very high level, high level and moderate level of awareness are significant at 5% level of significance as p-value is less than 0.05 and the beta coefficient for low level of awareness level is not significant at 5% level of significance as p-value is greater than 0.05.

So, it is concluded that awareness levels have significant impact on volume of investment in mutual fund. Estimated beta values are positive which indicates awareness level and investment in mutual fund is directly related. Beta coefficient is found highest, i.e., 6.673 in case of very high level of awareness followed by high level and moderate level of awareness. The high beta value indicates if an investor's awareness level is increased by one unit from very low (reference level) to very high, his/her investment volume will be increased from low level to high level at the highest rate.

Conclusion

The objective of this chapter is to identify the determinants of investment in mutual funds by bank employees. It is concluded that attitude, risk perception, awareness level, education, age, family income and experience are important determinants of investment in mutual fund. Moreover, some interaction effects are found to influence investment. It is concluded from the above finding that attitude and investment volume in mutual fund is positively related. It is found that overall level of attitude of bank employees in Tripura towards mutual fund is favourable. Investors, who have favourable attitude towards mutual fund, investing high volumes of investment in mutual fund and investors who have unfavourable attitude, are either not investing in mutual fund or investing at low level as per the findings. Subramanya and Murthy (2013) have supported this finding. Few studies did not support the above finding. Most of the respondents are still confused about the mutual funds and have not formed any attitude towards the mutual fund for investment (Singh, 2012; Black, 2004).

It is concluded 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. This finding is consistent with the findings of Singh and Bhowal (2009). Individual investors adopt action in order to reduce risk when their risk perception increases (Lepesteur et al., 2008; Slovic et al., 1987; Slovic, 1987). It is seen that overall level of risk perception of bank employees of Tripura towards investment in mutual fund is of moderate level. It is also concluded from the above finding that awareness level and investment volume in mutual fund is directly related. Investors, who have high awareness level, are investing in mutual fund in high volume. Bank employees who are highly unaware are not interested in investing in the mutual fund at all. This finding is also similar to the findings of Luigi et al. (2005). Salaried employees who are aware of the current financial system make significant impact while deciding the investment (Palanivelu and Chandrakumar, 2013).