Household Investor's Perception on Risk and Return and its Determinants

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Abstract

Risk perception plays an important role in investment decisions and is an emerging field in behavioural finance. Risk is an integral part of all investment which determines the return on investments. It is the loss or injury for the expected returns. Risk perception is an investor's belief or opinion based on their sensory information and became a critical success factor in all investment decisions. Various factors influence investor's perception on risk and return. This study aims to identify the factors influencing investor's perception on risk and return.

Keywords: Belief, Perception, Risk, Return

1. Introduction

A well-functioning capital market mobilizes savings of the household and channels them to productive uses. The increase in savings and productive investment are essential for economic growth. Indian financial system is capable of channelizing domestic savings and foreign capital into productive investment and to rend a productive financial service such as payments, savings, insurance etc. An emerging complex market oriented economy will need deeper, more efficient and well-regulated financial markets. The success of financial market depends upon the number of participants and volume of trade.

Risk perception plays an important role in investment decisions and emerging field in behavioural finance. Risk is an integral part of all investment which determines the return on investments. It is the loss or injury for the expected returns. Risk perception is an investor's belief or opinion based on their sensory information and became a critical success factor in all investment decisions. Various factors influence investor's perception on risk and return.

The risk/return trade-off is the balance between the desire for the lowest possible risk and the highest possible return. Investor's perception towards risk and return has been analysed with the help of following reviews. Elroy

Dimson et al. (2000) although equities gave the highest return in every country, the returns from shares were far more volatile, and hence riskier, than form bonds or short-term deposits.

Fisher & Hall (1969) stated that risk averse behaviour is manifest when low risk is associated with low return as well as when high risk is rewarded by high return.

Ross (1973) stated in his article based on decision making notions of individual rationality and maximization of utility and assumes a linear positive relationship between risk and return. Risk behaviour has been associated with assumptions of rational behaviour outcome weighing and utility maximization.

Adam K. Gehr Jr. (1979) stated that the fundamentals tenant of finance literature is that there exists a trade-off between risk and return and it is a common notion that return is an increasing function of risk.

Bowman (1980) found a distinct and significant positive relationship between risk and return.

Burton G. Malkiel (1982) said that one of the best-documented propositions in the field of finance is that, on average, investors have received higher rates of return on investment securities for bearing greater risk.

Lopes (1987) stated that even if the individual does not select specific asset such as stock investments are still made

through participation in employee saving programme or purchase of life insurance or in investment in real estate or in banks or in saving schemes of post offices, each of this investment has common characteristics such as potential risk and return the investor has to bear. The future is uncertain, and they have to determine how much risk they are willing to bear, since higher return is associated with accepting more risk.

Fiegenbau A., et al. (1996) the risk and return relationship has been presented and stated that whether the relationship between risk and return is positive or negative.

Raghavan R.S. (2000) commented on the risk perceptions and the risk measurement parameters. He opined that risk measures are related to the return measurements. While risks can only be contained and cannot be eliminated altogether, there is no doubt that some risks have to be taken to get adequate returns. Returns can be increased or made quicker by taking more financial and operating risks. But the environmental risks typically do not increase returns but serve as constraints on return and risk decisions. He concluded that the process of retaining the levels of risks within the desirable levels must be practiced in the daily operations. Ahmet Sekreter (2017) pointed out in his study that stock returns can be evaluated daily, weekly, monthly, or annually and further he stated some empirical tests have shown that 3-year time interval and annually evaluated stock returns give better results. Dr. Poornima S. & Swathiga P. (2017) stated that investing money in the assets where the risk is less has always been difficult to decide, that means the investor would like to see risk and return before investing and the Investors will find beneficial based on the risk and return analysis.

Rashmi Soni (2017) concluded that there is a strong positive relation between risk and return of individual asset classes. However, when a diversified portfolio of various asset classes is considered, the risk can be mitigated to a large extent and is usually higher for higher expected return. This helps in planning one's investment corresponding to his/her expected rate of return and the risk appetite.

2. Objectives of the Study

The objectives of the study are as follows:

1. To study the socio-economic, investment profile of the respondents.

2. To analyse the factors that influences the perception of average investors towards risk and return.

3. Hypotheses of the Study

Hypothesis $(H_0)1 =$ All the identified latent variables have equal influence on the investor's perception of risk and return.

4. Research Methodology

4.1 Sample Size

In the present study the sample includes both risk takers and risk averse investors, risk takers are identified as p and risk adverse investors are noted as q. Since the population of risk takers and risk averse is unknown using the above formula sample size for the research is determined as six hundred.

$$N = ¼ [(1.96)2 / (0.04)2]$$
$$= 0.25 [(3.84)/ (0.0016)]$$
$$= 0.25 [2400]$$
$$= 600$$

4.2 Sampling Method

The researcher used two major sampling techniques, probability sampling and non-probability sampling in this study. With probability sampling, all elements in the population have some opportunity of being included in the sample. Under this study, the average house hold investors from Kanyakumari district is taken as the sample population and with the view of providing equal opportunity to average investors from different taluks each taluk is considered as a separate strata respondents from all the taluk has given an opportunity to become a sample for the study. A random sample is selected from each stratum based upon the percentage that each subgroup represents in the population. With non-probability sampling, in contrast, average household investors are selected on the basis of their availability (e.g., because they volunteered) or because of the researcher's personal judgment that they are representative.

4.3 Universe for the Study

Average household investors of all the four taulks in Kanyakumari district are considered as the population for this research study. Four taulks in Kanyakumari district such as Kalkulam, Thovalai, Vilavancode and Agastheeswaram are selected as the study area for this research. The study population includes all type of investors such as businesspeople, professionals, employees of private sector, public sector organizations, self-employed, retired people, homemakers etc.

4.4 Sources of Data

The researcher used both primary and secondary data for the study.

5. Data Analysis and Statistical Tools Applied

Primary data collected from average household investors had been analysed with descriptive statistical analysis. Statistical analysis on the samples was carried out by framing suitable hypothesis based on the objectives stated earlier. Inferences were drawn based on descriptive statistical analysis and test statistics using the statistical techniques factor analysis and regression analysis. This research aims to identify the factors that have an effect on perception of individual investors on risk and return.

5.1 General Profile of the Respondents

General characteristics are important determinants which influence a person's perception and behaviours of investment. Many factors such as age, area of residence, gender and education, influence the household investment decisions of the average investors. And hence, the investigator has made an attempt to analyse the general characteristics of the respondents.

Table 1: General Profile of the Respondents

	Factors	Frequency	Percentage
Gender	Male	309	51.5
	Female	291	48.5
Age	21-30	119	19.8
	31-40	142	23.7
	41-50	165	27.5
	Above 50	174	29.0

Education	Less than and equal to 10th	16	2.7
	12th	87	14.5
	Diploma	38	6.3
	UG	107	17.8
	PG	252	42.0
	Professional	100	16.7
Area wise distribution	Agasteeswaram	278	46.3
	Thovalai	65	10.8
	Villavancodu	111	18.6
	Kalkulam	146	24.3

The researcher has considered 24 variables. The important factors measuring risk and return have been analyzed with the help of the scores of the 24 variables. In order to classify these 24 problems into important factors, the Exploratory Factor Analysis (EFA) has been administered. Thus, the EFA, a data reduction technique, is used to identify few factors that explain the perception of investors about risk and return (Table 1).

Initially, the sufficiency and suitability of data for factor analysis have been tested with the help of Kaiser-Meyer Ohlin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity. The Kaiser-Meyer-Ohlin Measure of Sampling Adequacy is a statistic value which indicates the proportion of variance in the variables, which might be caused by underlying factors. Bartlett's test of Sphericity indicates whether the correlation matrix is an identity matrix, which indicates whether the variables are unrelated. Table 2 shows two tests which indicate the suitability of data for factor analysis.

Table 2. KMO and Bartlett's test

Kaiser-Meyer-Ohlin Measure of Sampling Adequacy		.675
Bartlett's Test of Sphericity	Approx. Chi-Square	4263.791
	Df	276
	Sig.	0.000

Source: computed data

The validity of data for factor analysis has been confirmed as the KMO measure (0.675) is greater than 0.60. Also, the Bartlett's test of Sphericity chi-square value (4263.791) is significant at 1 per cent level, which indicates

the variables are correlated and the obtained correlation matrix is an identity matrix.

The executed EFA results in four important factors as shown in Table 3: Eigen values, variance explained, and cumulative variance explained for factor solution.

Table 3 shows that there are 4 factors whose eigen values are above 1.00. In addition, these four factors account for 63.634 per cent of the total variance. Thus, these four factors explain most of the variance that occur among all the identified variables. The variables under each of the four important factors are identified from the Rotated factor matrix.

Table 3. Identification of Factors and the Total Percentage of Variance Explained by Each of the Factors

Important Latent Problem (ILR)	Extraction Sums of Squared Loadings		
	Eigen Value	% of Variance explained	Cumulative % of variation explained
1	4.193	27.472	27.472
2	2.437	20.156	47.628
3	2.167	9.027	56.655
4	1.675	6.979	63.634

Source: computed data

Table 4 below shows the factor loadings of each of the variables and its corresponding factor. The correlations coefficients or factor loadings of all the variables indicated in the Table 4 are used to formulate the factors. The variables that have large factor loadings for a particular factor or component are grouped together and are taken as a single factor. Table 4 also reports the factor loadings for each variable on the components or factors after rotation. Each number represents the partial correlation between the item and the rotated factor.

The identified factors or the important latent perceptions are labelled and the numbers of variables under each factor are stated in Table 6.

It is observed from tables 1.5 and 1.3 that the first important factor identified is conscious investor behavior and its eigen value is 4.193. This factor alone explains the 24 variables included for the analysis to the extent of 27.472 percent since its percent of variance explained is 27.472. The next most important identified factors are social and traditional; and investor seeking information as their eigen values are 2.437 and 2.167. The percent of variance explained by the aforesaid factors are 20.156 and 9.027. The last identified factor is effect of income, its eigen values is 1.675. The percent of variance for the last factor is 6.979. The EFA shows the factor loadings and the investors' perception of risk and return in the area of study. The 24 observed perceptions are clustered into four latent factors. Even though the latent factors are identified, the relation between the observed perceptions and the latent perceptions is to be identified. In order to do this a Confirmatory Factor Analysis (CFA) is used. The CFA is used to postulate the relation between the observed variables and the underlying factors and then tests this hypothesized structure statistically. Thus, the researcher has used CFA to verify the four identified latent factors.

Table 4. Identification of factor components and their factor loadings from the rotated factor matrix

Variables	Components (Factors)			
	1	2	3	4
A diversified portfolio reduces risk.	**0.536**	-0.324	0.263	-0.076
Economic stability is a key element effecting investment decision for investors	0.388	0.125	**0.683**	-0.098
Government policies (contributions, tax reductions etc.) affect investor behaviour in a positive way	0.37	-0.187	**0.560**	0.051
High level of self-confidence is needed to make investment decisions	**0.518**	-0.078	0.385	-0.002
Increase in income level raises investor interest on financial instruments	-0.197	0.45	0.041	**0.540**
Investor closely follow investment tools performance and returns	-0.232	-0.052	0.662	-0.076

Investors income levels affect maturity date of investments they make	-0.088	0.154	0.435	**0.781**
Investors family structure and social environment affect their investment and decisions	0.153	**0.682**	0.258	0.03
Investors approach is to be cautious and avoid all risky investment.	**0.767**	-0.292	-0.255	0.351
Broker decides the best investment level for the investor.	0.155	0.212	0.019	**0.873**
Past investment experiences influence the investor while taking investment decisions	0.021	-0.109	**0.596**	-0.09
People prefer domestic investment companies to foreign investment companies	-0.081	**0.704**	-0.081	0.284
People residing in urban areas mostly make investments in risky assets	-0.15	**0.584**	-0.273	0.357
Prefer less risky investment tools (bank deposit, insurance, etc.) to risky investment tools (stock, Commodities etc.)	**0.541**	-0.494	-0.031	0.248
Prefer long term investments rather than short term investments	**0.779**	0.132	0.008	0.129
Prefer traditional investment tools (real estate, gold etc.)	0.078	**0.607**	0.038	0.493
Publications with financial content positively influence investor behaviour	-0.032	-0.118	**0.570**	-0.017
Religious and political views affect the investment decisions	-0.171	**0.621**	0.095	0.257
Sufficient information regarding investment tools is needed to make investments	-0.241	0.124	**0.545**	0.218
The higher an investments rate of return, the greater is its associated risk.	**0.653**	0.385	0.208	0.259
The more familiar an investment, the less risky it is.	0.02	**0.704**	0.464	0.121
The more money one has, the more investment risk one can take.	0.06	-0.232	0.471	**0.640**
The need to liquidate quickly prohibits me from considering riskier products.	-0.18	-0.124	0.258	**0.504**
The older people take lesser investment risk.	**0.764**	0.114	-0.058	0.414

Source: Computed Data, Extraction

Method: Principal Component Analysis. Rotation

Method: Varimax with Kaiser Normalization.

Table 5. Initial regression values

R	R Square	Std. Error of the Estimate
.874	.763	.064

Source: Computed Data

A Confirmatory Factor Analysis (CFA) was conducted to determine the validity of a measurement model by finding specific evidence of convergent validity. To satisfy the validity procedure, the following are the validity and reliability checks that were carried out:

- Convergent validity.
- Composite Reliability.

All factor loadings are greater than 0.70 and range from 0.714 to 0.944.

A regression analysis is carried out to test the influence of each identified latent factor i.e., conscious investor behavior, social and traditional; investor seeking information and effect of income on the investor's perception of risk and return.

5.2 Factors that Influences the Investor's Perception on Risk and Return

A regression analysis is undertaken to measure the relationship between the identified latent factors (independent variables) and investors' perception on risk and return (dependent variable).

The model of the regression would be in the form of

PRR = α+ βCIB$_1$ +βST$_1$ + βIIS$_1$ + βEI$_1$

The following hypothesis would be tested in the course of the analysis.

Hypothesis (H$_0$) = All the identified latent variables have equal influence on the investor's perception of risk and return.

Table 5 displays R, R squared, and the standard error. The estimated R-value (correlation coefficient) is 0.874. The R^2 value for the estimated equation is 0.763, which is significant at 1 per cent level of probability. It shows that 76.3 per cent of the variation in the investors' perception on risk and return is explained by the independent variables identified by the researcher.

Table 6. Factor identified and labelled

Sl. No.	Factors Identified and Labelled	Number of Variables under the Identified Factors
1	Conscious Investor Behaviour	7
2	Social and Traditional	6
3	Investor Information Seeking	6
4	Effect of Income	5

Source: Computed Data

Table 7 explains the regression ANOVA. The F statistic is 18.150 that are significant at 1% level. This indicates that the identified latent factors explain the investor's perception on risk and return. Table 7 shows the regression coefficients of the estimated regression model.

Table 7. ANOVA table

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	69.336	4	17.334	18.150	.000

Source: Computed Data

Table 8 shows the estimated regression coefficients of the regression model fitted. Here the estimated model is

Table 8. Regression Coefficients

Identified Latent Factors	Coefficients Beta	t	Sig.
(Constant)	2.547	10.549	.000**
Conscious investor behaviour (CIB$_1$)	.034	.865	.038*
Social and traditional (ST$_2$)	.348	7.782	.000**
Investor seeking information (IIS$_3$)	.219	-4.500	.000**
Effect of income (EI$_4$)	.023	.727	.021*

Source: Computed Data

**Significant at 1 percent level, [NS]: Not Significant, *Significant at 5 percent level*

PRR = 2.547** + 0.034*CIB1 +0.348**ST1 + 0.219** IIS1 + 0.023*EI1

Where: PRR= Perception on Risk and Return

CIB = conscious investor behavior

ST = social and traditional

IIS = investor seeking information

EI = effect of income

The regression results indicate that all the independent factors positively influence the investor's perception on risk and return. This is evident from the positive signs of the estimated coefficients of the identified latent factors. This means that if any of the identified latent factor increase, then investor's perception on risk and return will also increase. It is found that among all the factors influencing the investors' perception on risk and return, two variables i.e., social and traditional (0.348) and investor seeking information (0.219) have high beta value indicating that they are the most influencing factors which influence the investor's perception on risk and return. Also, these factors are significant at one percent level. The results indicate that the hypothesis (H0): All the identified latent variables have equal influence on the investor's perception of risk and return is rejected.

6. Conclusion

Investment decisions, that is to buy or sell or hold the security is based on the risk tolerance and response to

risk perception. The investor perceives risk and return based on their concerns and experiences. This concern and experiences are influenced by their consciousness, social and traditional, investment information and effect of income. Future researches can be conducted again with research topic based on the concept of behavioural finance.

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