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ANALYSING THE INVESTORS RISK ATTITUDE TOWARDS INVESTMENT PATTERN AND INVESTMENT STRATEGY

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Abstrtact
In order to analyze the risk taking behaviour of equity investors by their active participation in trade, activities in selling and buying shares, comparing the share prices, diversion of funds, actions during inflation risk and market risk, investment knowledge, credibility of stock market etc., the statistical techniques like descriptive analysis, reliability analysis, inferential analysis and confirmatory factor analysis were used from the sample size 400. To develop a suitable model, structural equation modeling (SEM) technique was used for analyzing the data.

Key Words: Risk Bearing Capacity, Behaviour of Equity Investors, Confirmatory Factor Analysis, Structural Equation Model.

Introduction

The level of risk depends upon the objective of investment. The investors expect greater return should also be prepares to take higher risk. Also an investors should assure high risk – high reward and low risk – low reward. By careful planning and periodical review of the market situation, the investor can minimize their risk on the portfolio. Risk avoidance and risk minimisation are the important objectives of securities analysis. Sometimes, a decision can lead to more than one possible outcome, such situations are best with uncertainly when it is not known exactly what will happen in future, but the variance possibilities are neglected by their assumed probability of occurrence is called risk.

To avoid and minimize risk the investors should invest early, invest regularly, and invest for long term. The risks are caused by wrong decision of what to invest, wrong timing of investment, and high amount of investment in one particular security. In this study, the risk taking behaviour of equity investors are analysed by their active participation in trade, activities in selling and buying shares, comparing the share prices, diversion of funds, actions during inflation risk and market risk, investment knowledge, credibility of stock market etc., sample used for this study was 400. Collected data were analyzed with the help of software package SPSS 17.0. Statistical techniques like descriptive analysis, reliability analysis, inferential analysis and confirmatory factor analysis were used to evaluate the risk bearing capacity. To develop a suitable model, structural equation modeling (SEM) technique was used for analyzing the data. All the measures used in structural equation modeling fit the recommended values indicating a good fit for the collected data.

Significance of Study

The study is expected to reveal the facts regarding equity investors risk taking behaviour for investments especially in equity market. The investors of today are more rapidly informed than their predecessors of yesterday. So they are better informed and better related. They want to be secure when they aspire to become rich, wanted to save while they are tempted to spend, want to feel joy of pride and avoid the pain of regret. However every broking agency in the equity market should plan their strategies for profit to investors on a long term basis. The study will help the agencies to understand the potential investors. They must be properly educated and guided the potential investors in a manner that more idle resources are invested in other avenues will be diverted properly. It has been proved by research that equity investors cannot be successful without proper guidance of applying investment strategy. It will also enable equity market companies to identify the relative important of financial advisor in decision making process of equity investor. Finally, it would be possible to evaluate the impact of demographical factors on the risk taking behaviour of equity investors therefore equity market companies and broking agencies can prepare a strategy for guiding the equity investors in accordance with research findings.

Litrature Review

Structural equation modeling (SEM) is a statistical modeling technique that combines factor analysis and multivariate multiple regressions (Hair et al., 2006). Structural equation provides estimation of multiple and interrelated dependence relationship and the capacity to stand for unobserved concepts in these association and explanation for measurement error in the estimation process (Hair et al., 1998). The primary aim of SEM is to explain the model of a sequence of inter-related dependence associations simultaneously among a set of dormant (unobserved) constructs, each measured by one or more manifest (observed) variables (Yu-Kai, 2009). SEM is a multivariate technique which combines confirmatory factor analysis modeling from psychometric theory and structural equations modeling (Yu-Kai, 2009). In order to recognize a right model for the sample data, fit indices have no single statistical test of significance (Schumaker and Lomax, 1996). There are number

of goodness of fit (GOF) indices with which to make comparisons, thus "fit should be evaluated from the standpoint of numerous fit statistics" (Campbell et al., 1995:6). The overall fit measures, the goodness-of-fit statistic (GFI), adjusted goodness-of-fit statistic (AGFI), root mean squared residual (RMR), and the normed fit index (NFI) (Bentler and Bonett, 1980), are all useful measures in assessing the quality of the hypothesized measurement model. Absolute fit indices determine how well a priori model fits the sample data (McDonald and Ho, 2002). Confirmatory factor analysis (CFA) is one of the most commonly employed tools to test the construct validity of developed instrument (Hair et al., 2006). This technique provides a more precise interpret-tation of dimensionality than the exploratory factor analysis (EFA) technique (Diana, 2006). CFA can be used as an interpretation of model fit indices (Schumaker and Lomax, 1996). Renganathan R, Balachandran S, and Govindarajan K,(2012), In order to survive and excel in the competitive scenario, organizations have to understand the customers' requirements. Service quality can be measured with the help of the two important instruments, namely SERVQUAL and SERVPERF. BANKSERV model can be used to measure the service quality of the banking sector. Customers' perception with regard to various services rendered by the banking industry was taken for this study. In his study, data were collected from 300 customers of the bank located in different parts of Tamilnadu and Pondicherry, India. In order to evaluate the association between the variables used in the model, structural equation modeling (SEM) was used for data analysis. The findings of the research showed that, absolute fit indices fits the sample data and reveals that the proposed model has the acceptable fit, by way of satisfying the recommended values. Imran Ali, Muhammad sharafat waheed, (2013) in their study Determinants of small equity investors risk assumption attitude, explores the personality traits, perceived personal control, behavioral biases, culture, and socio-demographics in determining individual equity investor's risk assumption attitude. The study uses a survey approach to collect responses from small equity investors. A conceptual model is developed and hypotheses are tested through structure equation model (SEM). The result identifies personality traits, perceived personal control, behavioral biases, cultural factor and socio-demographic variables as strong determinants of small equity investor's risk assumption attitude. This study also attempts to identify the factors that determine the risk assumption attitude of individual equity investors.

Objectives of Study

1. To examine the demographic details of the equity investors.
2. To analyze the investors risk attitude towards investment pattern and investment strategy.
3. To evaluate whether all the measures fit the recommended value, indicating a good fit of the structural model for the collected data.

Methodology

Data Collection and Sample

This study was conducted as a survey that examined equity investors located in Chennai city. The terms and concepts have been operationally defined, further the hypotheses for empirical validation are stated, sample selection, statistical methods for data analysis and tools used for measurements to obtain data are included.

The four taluks, Purasawalkam, Egmore, Mylapore and Guindy of Chennai city was chosen for collecting data by stratifying into four blocks. Since the equity share investors population of the selected taluks were large, nearly 8262, and all the respondents could not be interviewed due to the practical difficulties, the equity share investors were chosen from all the four stratified geographical area representing one hundred investors on the basis of proportionate stratified method from each taluk. So the sample size is 400. The selection of sample investors was made in consultation with the share broking companies. The investors were selected randomly from the list of clients given by share brokers in all four taluks. Many investors were reluctant to divulge their financial details especially annual income and amount of money invested in different investment avenues. Hence the data were collected from the equity investors who are willing to divulge the information.

Data Analysis

Collected data were analyzed with the help of software package SPSS 17.0. Statistical techniques like descriptive analysis, reliability analysis, inferential analysis and confirmatory factor analysis were used to evaluate the service quality. Structural equation model (SEM) was also used for data analysis. Friedman's ranking was used to identify the most important individual factors that influence Risk taking behaviour of equity investors.

H_0: There is no significant difference between demographical variables of equity investors with regard to the Investment avenues, awareness about investment, motivational factors, investment pattern, investment strategy and risk bearing capacity of equity investors.

Profile of the Respondents

The demographic profile of equity investors involved in this study. Out of 400 investors 69.5% were male and 30.5% were female. The demographic profile profoundly reveals that males are more active participants than female investors in equity

investment, the age group between 31 to 50 is actively traded in the equity market investment, the professionals are not much enthusiastic in equity shares investment and other group people show least interest in investing their surplus in equity shares investment, the educated investors are able to analyze the advantages and disadvantages of investment in equity shares and they also concede that they are able to get transparent information regarding equity shares, due to the future expenses most of the married investors concentrates more on equity share investment, if the family members are more, their investment behavior is very less because of their family commitments, however even if there are no dependents there is less investment behaviour due to no proper future prospects and therefore have no commitments. It shows that the investors with more than 60000 income shows more interest in equity share investment, most of the investors invest 10 to 15 percent of their income to the investment followed by 15 to 20 percent, though the investors are invested in equity market most of the investors prefer to invest in growth and income equity shares which has moderate risk.

Construct Reliability and Validity Analysis for Indices

Table 1: Result of Reliability Analysis for Indices

Indices	Number of Attributes	Cronbach's Alpha
Investment Avenues(B)	14	0.517
Investors Awareness(E)	10	0.587
Motivational Factors(F)	10	0.682
Investment Pattern(C)	10	0.874
Investment Strategy(D)	12	0.673
Risk bearing Capacity(G)	15	0.660
Overall reliability analysis for indices	Cronbach's alpha No. of items	0.728 71

While applying Likert-types scales in research it is necessary to calculate cronbach's alpha coefficient for reliability and consistency (Joseph et. al., 2003) the above table shows component and total reliabilities of scores. The findings show that cronbach's alpha for investment pattern is above 0.70 which indicates a high level of internal consistency for the scale. Moreover, as per the table, overall cronbach's alpha value for dimensions is 0.728. The cronbach's alpha values for the perceptions subscales are 0.517, 0.587, 0.682, 0.874, 0.673 and 0.660 for investment avenues, motivational factors, awareness about investment, investment strategy and risk bearing capacity.

Confirmatory Factor Analysis

The confirmatory factor analysis shows the corrected item total correlations; that is the scores of the rest of an item and the summated scores of the rest of the items comprising a subscale (for example the subscale measuring the credibility dimension of investment pattern and strategy) were correlated of the individual risk bearing capacity items, all the items had correlated with the total scores that was higher than the 0.35 cut-off value suggested by Saxe and Weitz (1982) was taken for the study and below the range of 0.35 was omitted. The item total correlations for the perceptions scale are ranging from 0.141 to 0.879. It also contains item means and standard deviations.

Structural Equation Modelling (SEM): Model Fit Assessment

Table 2: Model Fit Summary of Structural Equation Model

Indices	Value	Suggested value
chi square value	6.319	-
P value	0.097	>0.05 (Hair et al.,1998)
GFI	0.979	>0.90(HU and Bentler,1999)
AGFI	0.951	>0.90(Hair et al. 2006)
CFI	0.975	>0.90(Daire et al., 2008)
RMR	0.054	<0.08(Hair et al. 2006)
RMSEA	0.041	<0.08(Hair et al. 2006)

Structural equation modeling was used to analyze the suitability of the model based upon the collected samples. As recommended by Anderson and Gerbing (1988), measurement model to test the reliability and validity of the survey instrument was analyzed first, and by using SPSS version 17 the structural model was analyzed. The structural equation model (SEM) is most useful when assessing the causal relationship between variables as well as verifying the compatibility of the model used (Peter, 2011). Structural equation modeling evaluates whether the data fit a theoretical model. In order to

evaluate the model, emphasis was given to Chi-square CFI, GFI, AGFI, RMR, and RMSEA (Table 2). As per the result, Chi square statistics with p = 0.000 does not show a good fit of the model. Nevertheless according to Schumaker and Lomax (1996), a sample size of over 200 (400 in this research), could affect Chi-Square statistics to indicate a significant probability level (p=0.00). Consequently, this model is considered for further interpretation in the goodness of fit measures. Common model-fit measures like chi-square, the comparative fit index (CFI), root mean square error of approximation (RMSEA), the goodness of fit index (GFI), Adjusted goodness of fit index (AGFI), and Root mean square residuals (RMR) were used to estimate the measurement model fit. Table 2 shows the estimates of the model fit indices from SPSS structural modeling.

From the above table it is found that the calculated P value is 0.097 which is greater than 0.05 which indicates perfectly fit. Here GFI (Goodness of Fit Index) value and AGFI **(**Adjusted Goodness of Fit Index) value is greater than 0.9 which represent it is a good fit. The calculated CFI **(**Comparative Fit Index) value is 0.975 which means that it is a perfectly fit and also it is found that RMR (Root Mean Square Residuals) and RMSEA **(**Root Mean Square Error of Approximation) value is 0.054 and 0.041 which is less than 0.10 which indicated it is perfectly fit. Goodness of fit indices support the model fit and these emphasized indices indicate the acceptability of the structural model. For the purpose of testing the model fit null hypothesis is framed.

Hypothesis

H_0: The hypothesized model has a good fit.

As per the table 2, it is clear that values of all the items are above the suggested value of 0.5 (Hair et al., 2006). According to Bollen (1989), the higher the probability associated with Chi-square, the closer the fit between the hypothesized model and the perfect fit. Figure 1, yielded a chi-square value of 58.829, with 15 degrees of freedom and a probability of less than 0.0001($p < 0.0001$). It is suggesting that the fit of the data to the hypothesized model is not entirely adequate. As per the result, Chi square statistics with p = 0.000 does not show a good fit of the model. Nevertheless, according to Schumaker and Lomax (1996), a sample size of over 200 (400 in this study), could affect Chi-square statistics to indicate a significant probability level (p=0.00). Consequently, this model is considered for further interpretation in the goodness of fit measures. According to Barbara (2009), both the sensitivity of the Likelihood ratio test to sample size and its basis on the chi-square distribution, which assumes that the population (that is, H_0 is correct), have led to problems of fit are now widely known. According to Joreskog and Sorbom (1993), chi-square statistic equals (N-1) Fmin, (sample size-1, multiplied by the minimum fit function) this value tends to be substantial when the model does not hold and when sample size is large. Barbara (2009) stated that, researchers have addressed the chi-square limitations by developing goodness-of-fit indices that take a more practical approach to the evaluation process.

Significant Tests of Individual Parameters

Table 3: Regression Weights: (Group Number 1 - Default Model)

S/N		Factor	Estimate	S.E.	C.R.	P
F_TOT	<---	C_TOT	0.336	0.057	5.899	***
E_TOT	<---	D_TOT	0.293	0.049	5.915	***
E_TOT	<---	C_TOT	0.420	0.061	6.926	***
F_TOT	<---	B2_TOT	0.283	0.074	3.847	***
E_TOT	<---	B2_TOT	0.387	0.078	4.951	***
F_TOT	<---	D_TOT	0.252	0.047	5.406	***
G_TOT	<---	E_TOT	0.490	0.060	8.205	***
G_TOT	<---	F_TOT	0.607	0.068	8.988	***

Table 3 shows the unstandardised coefficients and associated test statistics. The amount of change in the dependent mediating variable for each one unit change in the variable preceding it is symbolized by the unstandardised regression coefficient. The Table 3 shows the unstandardised estimate, its standard error (abbreviated S.E) and the estimate divided by the standard error (abbreviated C.R for critical Ratio). Under the column P, the probability value associated with the null hypothesis that the test is zero is exhibited.

Level of Significance for Regression Weight

As per the Table 3, the probability of getting a critical ratio as large as 8.988 in absolute value is less than 0.001. In other words, the regression weight for F_TOT, motivational factor in the prediction of G_TOT, risk bearing capacity is significantly different from zero at the 0.01 level (two-tailed). The probability of getting a critical ratio as large as 8.205 in

absolute value is less than 0.001. In other words, the regression weight for E_TOT, investor awareness in the prediction of G_TOT, risk bearing capacity is significantly different from zero at the 0.001 level (two-tailed). For large samples under suitable assumptions, these statements are approximately correct.

Scalar Estimates (Group I) Default Model
Maximum Likelihood Estimates

Table 4: Standardized Regression Weights: (Group number 1 - Default model)

S/N		Factor	Estimate
F TOT	<---	C TOT	0.297
E TOT	<---	D TOT	0.284
E TOT	<---	C TOT	0.328
F TOT	<---	B2 TOT	0.172
E TOT	<---	B2 TOT	0.208
F TOT	<---	D TOT	0.276
G TOT	<---	E TOT	0.365
G TOT	<---	F TOT	0.399

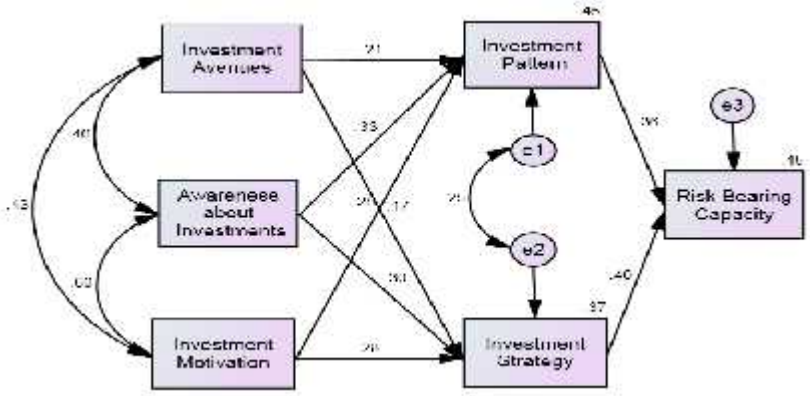

Figure 1: SEM Based on Standardised Coefficients

Table 4 shows the standardized estimates for the fitted model. Relative contributions of each predictor variable to each outcome variable can be evaluated by standardized estimates. Figure 1 shows the structural model. Out of 71 items, 48 items were taken for confirmatory factor analysis. As per figure 1, it is clear that investors attach more values to investment strategy and investment pattern compares to other risk taking items. Confirmatory factor analysis is furthermore known as measurement model. The root mean square error of approximation enlightens us how the model, with unknown parameter estimates would fit the population covariance matrix (Byrne, 1998). According to Kline (2005), CFI, RMSEA can be utilized along with Chi-Square test to calculate the measurement model fit. As an alternative to Chi-square test, goodness-of-fit statistic (GFI) formed by Joreskog and Sorbom, (1993) is able to calculate the proportion of variance (Tabachnick and Fidell, 2007). Model can be evaluated with the help of Normed fit index by means of comparing the Chi-square value of the model with Chi-square of the null model (Bentler and Bonnet, 1980). CFI is important in all SEM programs because its measure is least affected by sample size (Fan et al., 1999). According to McDonald and Ho (2002), CFI and GFI are the most frequently used fit indices in structural equation modeling.

Conclusion and Implications

Risk taking behaviour of equity investors were examined by various factors. The equity investors' socio-economic characteristics, information seeking behaviour, investment choosing strategies, investment behaviour characteristics are mainly determine the level of risk bearing capacity. It could be very well concluded that the hypothesized three-factor model fits the sample data. Based on the viability and statistical significance of important parameter estimates; the considerably good fit of the model (CFI, GFI, AGFI, RMR, RMSEA), it can be concluded that the three factor model represents an adequate description of risk bearing capacity for the equity investors goodness of fit and these emphasized indices indicate the acceptability of structural model. In the end, it was concluded that investment strategy and investment pattern helps investors in lowering risk taking behaviour and also allows taking decision on risky instruments. But as age and experience increases, investor preference changes to less risky investments, it does not mean that the equity investor does not prefer to invest in shares, he will, but with the intension of getting dividend return rather than capital gain.

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