Chapter 1

INTRODUCTION

1.1 Background of the Research

The financial system plays a central role in the economic development of a country by facilitating the allocation of scarce resources. It intermediates the flow of fund between those people who save their income and those who invest in various assets. With the opening of the Indian economy and the subsequent reforms in the financial sector, the Indian financial market has been growing immensely over these years. Mutual Fund (MF) is one such financial intermediary which has played a significant role in the development and growth of capital market in India. Mutual fund is a major investment media in the advanced countries, as they provide a great opportunity to invest in a diversified portfolio. Since the beginning of mutual funds in India in 1964 there were only 25 crore Assets Under Management (AUM), but now it has grown AUM of INR 7,01,443 crore at the end of fiscal year March 31, 2013 with 1,294 mutual fund schemes and 44 fund houses (AMFI Update, March 2013).

However the Indian mutual funds have not attained equal status as their counterparts in other developed countries like USA, UK etc. “The penetration of mutual funds in India (as measured by the AUM/GDP ratio) remains low at 7 percent compared to 77.0 percent in the US, 41 percent in Europe and 40.3 percent in the Brazil” (ICI, USA, 2012). There is a significant scope for further expansion of the mutual fund industry in India as evidenced by the cross country comparison of AUM-GDP ratio.

It is well established fact that, in India the household savings have a major role to play in capital formation in the country. “The gross domestic savings rate had increased continuously from an average of around 10.0 percent of GDP during the 1950s, 18.6 per cent in the 1980s and 23 per cent in the 1990s. The savings rate exceeded 30 per cent for the first time in 2004-05 and has remained above that level ever since. It peaked in 2007-08 at 36.8 per cent and reached an eight-year low in 2011-12 to 30.8 per cent and went up to 31.7 percent during 2012-13” (CSO Report,
2013). Though India has a high household saving ratio, the mutual funds have not been able to make a profound impact in channelising these savings from the households to the securities market. It is widely believed that mutual funds are retail product, designed to target retail investors who are intimidated by the stock market who are unique and highly heterogeneous group. With the high savings rate and increased deployment of investment through capital market, the scope of mutual fund as an investment vehicle has increased greatly.

Further the globalization and liberalization by the government led to a paradigm shift in investment avenues of retail investors. In the present dynamic financial environment, exploring investment avenues are of great importance. The success of investment depends upon the knowledge and ability of the investors. The retail investors have become unfriendly due to the instability in the capital market and mutual fund is said to be the best investment option to reap the benefits of stock market.

Though, mutual funds in India is flourishing due to the booming economy and increased savings, it further need to create more rewarding solutions to match the investor’s expectations. The AUM as a percentage of GDP in India during FY2012 was 6.6 percent (RBI Annual Report, 2013). The mutual fund industry has been remarkably resilient over the last decade in spite of varying economic conditions, capital market scams, and increasing competition.

Despite the fact that the global financial industry continues to grow, the research of mutual funds has been confined to only a few developed markets. Although emerging market such as India has attracted the attention of investors all over the world they have remained devoid of systematic research, especially in the area of mutual funds. In an effort to plug the gap, the study attempts to find out the extent to which mutual funds has become a preferred investment avenue among the retail investors of Kerala.

1.2 Statement of the Problem

As stated, Indian mutual fund industry is yet to catch the attention of the investors to a great extent, but the potential for growth is tremendous in the long run with a vast investor base yet untapped.
Investments in financial assets is one of the most vital and challenging decisions faced by the retail investors. Retail investors are more comfortable in investing in a good representation of the capital market, but unfortunately they are unfamiliar with risk and diversification, thus making them exposed to the fluctuations within the market.

Mutual Fund has become an important portal for retail investors as it offers the advantage of portfolio diversification, professional management at low cost and high level of operational transparency. Innovations in information technology and increased financial disclosure are creating an investor friendly environment. Meanwhile with the increasing number of funds, the task of picking up the right funds that match ones investment objective is challenging for the retail investors and little is known about the mutual fund selection process also.

The decision making process of retail investors is extremely important and the fund choice can have a substantial impact on the investor’s wealth and satisfaction. The mutual fund can survive and thrive only if it can perform up to the expectation of investors and more and more retail investors opt mutual fund as a preferred investment option.

Individual investors are generally constrained by inadequate knowledge, non availability of information, lack of investment skill, etc. that effect the formation of investment perception as well as the investment activities. Their decision making on investment choices often relies on observable socio-demographic variables. The research seeks to answer the following questions by undertaking an in-depth study by examining the behavioural aspects of the investors. In this regard, it asserts certain questions as to: What is the preference of retail investors towards mutual fund as an investment option? What type of information sources and communication mode are preferred? What are the issues related to mutual fund investment? What are the factors that influence the purchase of mutual fund? What are the perceptual factors? How do the demographic variables influence the risk tolerance level of investors?.

Hence the study aims to find out the solutions to these questions by analysing the investors behavioural issues based on the broad socio-demographic variables and tries to unveil some extremely valuable information’s to support
financial decision making on mutual funds for both the regulators, AMCs and retail investors.

1.3 Significance of the Study

The Indian financial services sector has undergone a complete transformation since the liberalization and in particular, the most dramatic changes have occurred in the mutual fund industry. There has been a distinct change both in the quality and the range of products offered by the various AMC’s. The industry was a monopoly for a long time. Since the entry of new public, private as well as foreign players in the market, Indian investors are being offered the best and the choicest of products. The bullish run of the stock market has certainly helped the industry, but it is not only the factor behind the industry’s growth. Today, investors have realized the opportunity cost of keeping their funds idle. They are looking for better return from their investments. Mutual funds present a safe way of investing, along with its advantages over other investments and have reached a level of acceptance where they are replacing traditional investment avenues.

The Indian mutual fund industry has recorded a tremendous growth in size during the last decade with an asset size rising from Rs. 90,587 crore in 2001 to 7,01,443 crore in March 2013. Indian mutual fund industry grew 7.74 times during this period. The Asset under Management (AUM) as percentage of GDP in India was 4.7 percent in 2001 and 6.6 percent as on March 2012 (AMFI Update, 2013). Small investors are being crowded out of the primary and secondary market and mutual funds are becoming the only way for small investors to invest in capital market. Mutual fund comes to the rescue of those people who do not excel at the stock market due to certain mistakes they commit which can be minimized with mutual fund investments. As the Indian markets and investors mature, financial advisers, product diversification and multi distribution channels are critical for long term success. Increasing investor awareness will help to propel growth for the Indian mutual fund industry.

“The business of Indian mutual fund industry is largely confined within the Tier 1 cities; however, the industry is focussed on developing the penetration ratio and increasing its presence in other cities. Currently, the top five cities of India contribute to 74 percent of the entire pie, with the remaining 26 percent
distributed among other cities”. *(Mutual Fund Submit, CII - PwC Report, 2013).*

AUM by geography - consolidated data for MF industry in three major corporations of Kerala as on 31-Mar-2013 is less than 1% (Cochin 0.42%, Trivandrum 0.15% and Calicut 0.05%) where as top 5 metros in India contribute 74.04 percent.

It is widely believed that mutual fund is retail product designed to target small investors. *SEBI’s Annual Report 2012-13* states that, the unit holding pattern of individuals as on March 2013, were 96.9 percent of the total folios, and their share in total net assets was 47.75 percent. The role of mutual fund as a financial intermediary for resource mobilisation and for the growth of capital market is very obvious. Thus the Indian mutual funds industry is yet to catch the attention of the retail investors to a great extend and the potential for growth is tremendous with a vast investor’s base yet to be tapped. The current reforms in public pension system will provide an opportunity for individuals to invest in capital markets through mutual funds. Although mutual funds industry is responding to the dynamism in investor’s perception towards the instrument, still it persists to address information asymmetries.

The existing research on mutual funds is largely done on the return on funds or comparison of funds with benchmarks. Few studies are carried out on investor’s objective, risk orientation and perception of investors. With the growing importance of mutual fund investments, understanding of investor behaviour is very significant as it help the players and policy makers to meet the challenges and opportunities of the investors. The study aims to deepen the knowledge on investor’s behaviour by examining the investor’s decision on mutual fund investments.

Financial markets are becoming more competent by providing better investment opportunities to the investors. Mutual fund industry is also responding by designing new and innovative products but these changes should be in accordance with the investor’s expectations. Thus, it has become critical to study mutual funds by focussing on investor’s expectations and also the reasons for their dissatisfaction, if any. The study proposes to identify decisive gaps in the existing frame work for mutual funds and to understand the need for reframing the existing mutual fund services by acknowledging investors perception.
1.4 Need for the Study

India’s savings rate is 31.7 percent of GDP as on 2012-13 (GoI, Economic Survey, 2013) which is one of the highest in the world. To increase the economic development of the country, along with the increase in the savings rate, the financial savings also should be accelerated for rapid economic growth. The efforts towards channelisation of savings and the general reluctance of the investing populous demand the active role of mutual funds. As investment in equity shares are too risky, mutual funds have to become efficient in mobilization and allocation of resources. The rate of conversion of household savings into financial investment in our country is very low. “The percentage of household savings that flew into the capital market in India is as poor as 7 percent, as against 25 percent in the U.S.A. and 19 percent in Japan”. (ICI, USA, 2012). As the household sectors share is much higher in the country’s savings, it is of utmost importance to show a right path for their deployment.

The Indian household investors largely try to avoid risk and are very reluctant to invest into capital markets. Hence intermediaries like mutual funds are required to attract surplus funds possessed by this sector into capital markets. Though mutual funds were intended to cater the needs of the retail investors, the industry has not won the investors confidence to attract the share of retail investors. Today more and more of players are entering into these market and a naive investor is unable to invest in the right fund. Thus the study intends to help the retail investors to make value judgement in terms of their investments into capital markets through mutual funds.

1.5 Scope of the Study

The scope of the study was limited to Kerala State focussing on the retail investors who have invested in mutual funds. The sample of the study was collected from three zones based on the geographical spread focussing panchayath, municipalities and corporation from each zone. The main intention of the study was to assess the retail investor’s preference and perception towards mutual fund as an investment option.
1.6 Objectives of the Study

The primary objective of the study was to know about the behavioural aspects of mutual fund retail investors, for which the following objectives were framed:

1. To assess the preference towards mutual fund as an investment option among the retail investors.
2. To analyse the importance of information sources and the preferred communication mode among the mutual fund investors.
3. To identify the issues related to mutual fund investment.
4. To ascertain the factors that influence the investment in mutual fund.
5. To identify the perceptual factors and examine investors perception towards mutual fund investment.
6. To determine the risk tolerance and satisfaction level of the mutual fund retail investors.
7. To find out the variables that positively mediates between perception and satisfaction.

The study also critically analysed the Indian mutual fund industry since its inception and investment and saving of India since 2000 to 2013.

1.7 Hypotheses

For testing purpose, some of the above research issues were converted into hypotheses. The dimensions of risk, satisfaction level, micro and macro and demographic factors were used for forming the corresponding hypotheses, each addressing the overall constructs. The dimensions, namely perception of mutual fund investors, issues faced by mutual fund investors and important factors considered for mutual fund investment were also used for formulating the hypothesis relating to the various dependent factors identified using factor analysis.

Following are the hypotheses for the study:

H₁: There is significant difference in the preference towards mutual fund among investors with respect to demographic factors.

H₂: There is association between demographic variables and source of information.
H₃: There is association between demographic variables and communication mode.

H₄: There is significant difference among demographic variables for core issues (Complexity, Non performance and Management Issues) in mutual fund investment.

H₅: There is significant difference among investors depending on different sources of information for various issues in mutual fund investments.

H₆: There is significant difference among demographic factors and factors influencing purchase (Fund, Investor, AMC- Sponsor) of mutual fund.

H₈: There is significant difference in perceptual factors (Convenience and Flexibility, Regulation and Transparency, Knowledge and Awareness, Return and Affordability) with respect to demographic factors.

H₉: There is association between demographic variables and risk tolerance level.

H₁₀: There is association between demographic variables and level of satisfaction.

H₁₁: There is significant difference among risk tolerance level of mutual fund investors and their satisfaction level.

1.8 Methodology

In pursuance of the objectives and hypotheses stated above, the following methodology was adopted to conduct the research study.

1.8.1 Search for Literature

An earnest attempt was made by the researcher to collect all available literature from different journals, magazines, newspapers, books and websites. The researcher visited libraries at IIM Bangalore, IIM Calicut, IFMR Chennai, Madras University, IIT Chennai, Kerala, CUSAT, Calicut and MG Universities and CDS Thiruvananthapuram. The researcher also approached AMFI, the regional offices of BSE, SEBI, CDSL, NSDL, Fund Houses and Depository Participants for various supporting documents and literature for the study.
1.8.2 List of Variables Analysed

Table 1.1

Variables used in the Study

<table>
<thead>
<tr>
<th>No.</th>
<th>Purpose</th>
<th>No. of Variables</th>
<th>Name of Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>To profile the respondents</td>
<td>8</td>
<td>Gender, Age, Education, Area of Residence, Zone, Occupation, Annual Income, Annual Savings</td>
</tr>
<tr>
<td>2</td>
<td>To assess the preference towards various investment options and rank them</td>
<td>12</td>
<td>Bank Deposit, POS, NSC, Pension &amp; Provident Fund, RBI/Infrastructure Fund, Mutual Fund, Equity, Debentures, Insurance, Chit, Gold/Silver, Real Estate</td>
</tr>
<tr>
<td>3</td>
<td>To find out the saving objectives of mutual fund investors</td>
<td>6</td>
<td>Capital appreciation, Supplement the current income, Tax saving, To meet contingencies, Income after retirement</td>
</tr>
<tr>
<td>4</td>
<td>To identify the importance of information source</td>
<td>3</td>
<td>Advertisement, Data and Information, Advice and Recommendation</td>
</tr>
<tr>
<td>5</td>
<td>To identify various issues related to mutual fund investment</td>
<td>3</td>
<td>Complexity, Non performance, and Management Issues</td>
</tr>
<tr>
<td>6</td>
<td>Factors considered for selection of mutual fund</td>
<td>3</td>
<td>Fund related factors, Investors related factors, AMC/Sponsor related factors</td>
</tr>
<tr>
<td>7</td>
<td>To identify the perceptual factors towards mutual fund investment</td>
<td>4</td>
<td>Knowledge and Awareness, Regulation and Transparency, Convenience and Flexibility, Return and Affordability</td>
</tr>
<tr>
<td>8</td>
<td>To assess the satisfaction level</td>
<td>3</td>
<td>Satisfied, Moderately satisfied, Dissatisfied</td>
</tr>
<tr>
<td>9</td>
<td>To assess the risk tolerance level of mutual fund investors</td>
<td>3</td>
<td>High, Moderate and Low</td>
</tr>
</tbody>
</table>

1.8.3 Item Generation, Content Validity and Instrument Development

Extensive literature survey enabled the researcher to identify all variables and statements related to the study. Detailed discussions were made with subject experts, fund house managers and various depository participants for item generation process (Churchill, 1979 and Muraki, 1990). The draft questionnaire was submitted to eminent academicians and industry experts for examining the validity of the instrument. The statements with respect to major issues, important factors for selection, perception of investors and risk attitude in mutual fund investment were thoroughly scrutinised, and those statements highly rated were included in the final questionnaire. The five point and seven point Likert scaling techniques were applied in the instrument along with some close ended questions for additional inputs.
1.8.4 Pilot Survey and Instrument Pre-test

A pilot study was conducted for testing the appropriateness of the research questions and methods adopted. The pilot study helped in selecting the appropriate data collection plan and also to check which sampling technique was appropriate. In addition the reliability of the questionnaire was also tested through the pilot study. (Churchil, 1979 and Nunnally, 1978) The initial survey was conducted by the researcher personally among 100 retail investors in central Kerala. Based on their responses, the reliability of the instrument was checked. Cronbach alpha, KMO measure of adequacy and Bartlett’s test of sphericity were done. Cronbach alpha was calculated to measure the internal consistency and reliability of the instrument. Those items having their communalities below 0.4 and Cronbach’s alpha below 0.6 were removed from the final questionnaire resulting in 13 statements for issues faced in mutual fund investment, 27 statements for important factors for mutual fund selection and 22 statements for perception of investors towards mutual funds.

1.8.5 Research Design

The quality of research depends upon the suitability of the method selected for it. According to the intent, descriptive research and according to the method analytical study was adopted. Descriptive research, also known as statistical research, describes data and characteristics about the population or phenomenon and focus on particular aspects or dimensions of the problem studied. On the other hand, analytical study is primarily concerned with testing hypothesis and specifying and interpreting relationships. Thus, the research design was appropriate for the present study to gauge the various sources and impact of mutual fund as an investment option among the retail investors and also to understand the dynamics of problems, factors influencing purchase and perception of mutual fund investors. Both primary and secondary data were used for the study.

1.8.6 Sample Design

Universe

The population for the research study is the mutual fund retail investors of Kerala.
**Sampling Unit**

The sampling unit of this survey is an individual, who is technically called as a ‘retail investor’ who has invested in mutual funds during the period of study. For the research study, Kerala state was divided into three zones viz: South, Central and Northern zones. To analyse the geographical distribution of unit holders, the study was focused on Corporations, Municipality and Panchayath from each of these three zones.

**Sampling Frame (Source List)**

Clients of Depository Participants (DP) from each zone constituted the source list.

**Sample Size Determination**

Sample size calculation is concerned with how much sample is required to make a correct decision on particular research. This doesn’t necessarily mean that more is always best in sample size calculation. One of the major challenges is to determine the sample size accurately, especially a study like this where there is no reliable source to determine the correct number of mutual fund investors in Kerala. So in this case researcher used the power analysis based on the pilot study with 5% level significance (p value) and 90% power to determine the sample size using software Sigma-plot 11.0. The result of the analysis is given in the following table.

The maximum required sample size turns to be 442. The result of the analysis given in the following table:

<table>
<thead>
<tr>
<th>Type of test</th>
<th>Minimum Sample</th>
<th>Maximum Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correlation</td>
<td>87</td>
<td>312</td>
</tr>
<tr>
<td>Z test</td>
<td>67</td>
<td>442</td>
</tr>
<tr>
<td>ANOVA</td>
<td>83</td>
<td>296</td>
</tr>
<tr>
<td>Chi Square</td>
<td>47</td>
<td>339</td>
</tr>
<tr>
<td>So required Sample Size</td>
<td></td>
<td>442</td>
</tr>
</tbody>
</table>
**Sampling Procedure**

Survey method was used as a technique for data collection among the retail investors and interview method for exploring practitioner’s perspectives due to the qualitative nature of the information. To obtain a probability sample, considerable effort was devoted for selecting the appropriate sample plan.

For conducting the survey among retail investors a multistage random sampling was applied. For this purpose, Kerala state was divided into three zones viz: south, central and northern zones. South zone comprising of Thiruvanathapuram, Kollam, Alappuzha, and Pathanamthitta districts; Central zone comprising of Kottayam, Idukki, Ernakulam, and Thrissur districts; Northern zone comprising of Palakkad, Malappuram, Kozhikode Wayanadu, Kannur and Kasargodu districts. To analyse the geographical distribution of unit holders, the study was focused on panchayath, municipality and corporations in each of these three zones based on the broad socio-economic classes. To study the urban area, corporations viz; Thiruvanathapuram, Ernakulum and Kozhikode and to cover the semi-urban and rural areas, municipality and panchayats from Pathanamthitta, Kottayam and Palakkad were taken as sample from each zone. Respondents were selected on a random basis from the client list of Depository Participants.

**Sample Profile**

The collection of data was based on multistage random sampling based on geographical distribution of investors. A population sample survey among investors was collected from three zones. As the AUM by Geography - Consolidated data for MF Industry in three major Corporations of Kerala as on 31-Mar-2013 is less than 1% (Cochin 0.42%, Trivandrum 0.15% and Calicut 0.05%), it was evident that central Kerala has got more than double the size of mutual fund investors. Accordingly 150 copies of questionnaires were distributed in north and south zone respectively and 300 copies of questionnaires were distributed in central zone. After editing of questionnaire for completion, accuracy and consistency the researcher was left out with 472 numbers of questionnaires. The zone wise response is given in the following table:
### Table 1.3

**Cross Tabulation of Area of Residence and Zone**

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Count</th>
<th>% within Area of residence</th>
<th>% within Zone</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panchayath</td>
<td></td>
<td>South</td>
<td>Central</td>
<td>North</td>
</tr>
<tr>
<td></td>
<td></td>
<td>27</td>
<td>105</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15.6%</td>
<td>60.7%</td>
<td>23.7%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>23.1%</td>
<td>39.5%</td>
<td>46.1%</td>
</tr>
<tr>
<td>Municipality</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>48</td>
<td>77</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td></td>
<td>29.8%</td>
<td>47.8%</td>
<td>22.4%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>41.0%</td>
<td>28.9%</td>
<td>40.4%</td>
</tr>
<tr>
<td>Corporation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>42</td>
<td>84</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30.4%</td>
<td>60.9%</td>
<td>8.7%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35.9%</td>
<td>31.6%</td>
<td>13.5%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>117</td>
<td>266</td>
<td>89</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24.8%</td>
<td>56.4%</td>
<td>18.9%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

*Source: Primary data*

#### 1.8.7 Method for Data Collection

The study is based on both primary and secondary data. The primary data were collected using survey method. Surveys offer an appropriate tool because they can measure predefined constructs and test the hypothesis. The level for the data collection was individuals, because the focus of the research study was individual investors. The methodology adopted was through questionnaire method. In-depth interviews and focus group discussions with AMC, brokers and experts were also carried out to gain more insight into the issue. The purpose of the survey was to understand the behavioural aspects of individual investors, mainly their fund selection behaviour, various factors influencing this behaviour and also the perception among individual investors. Secondary data were collected from various sources viz; AMFI, Asset Management Companies, SEBI, RBI etc.

#### 1.8.8 Data Analysis

Coding of variables in quantitative research is very critical for better interpretation of results. The questions and responses were coded and entered in the
data editor using SPSS software. Various statistical methods were applied on the data to get the results which were analyzed.

Descriptive statistics were used to describe and summarize the properties of the mass data collected from the respondents. The common measures such as frequency, percentage, mean, standard deviation, coefficient of variation were used.

The tests like independent sample Z test, one way ANOVA and Chi Square were used to test the significance of the hypothesis. Inferential statistics were used for comparison and advanced methods like Post Hoc Turkey HSD, Exploratory factor analysis, Confirmatory factor analysis and Regression model fit indices for CFA were used for modelling the data. Finally Mediation and Sobel test analysis were used to evaluate the mediation effect between the variables under study.

**Tools used for Data Analysis**

**Mean**

The mean, the measure of central tendency was calculated to find the simple arithmetic average of all the values in the distribution. The mean percentage score 

\[ mps = \frac{mean \times 100}{maximum \ possible \ score} \]

were also calculated.

**Standard Deviation**

Standard deviation a measure of fit was used to measure how well the mean represents data. Standard deviation is the square root of the variance. It measures the spread of a set of observations and larger standard deviation shows more spread of the observations. Small standard deviation (relative to the value of the mean itself) indicates that data points are close to mean. A large standard deviation (relative to mean) indicates that the data points are distant from the mean (i.e. the mean is not the representation of the data).

**Coefficient of Variation**

Based on this the mean and SD score of the respondents for the variables, its Coefficient of Variation \( CV = \frac{Standard \ deviation \times 100}{mean} \) was calculated to find out the variation among factors in different groups.
Chi-Square Test

Chi-square is used as a non parametric test. It is used to determine if the categorical data shows dependency or two classifications are independent. It is also used to make comparison between theoretical population and actual data when categories are used. The test of independence explains whether or not two attributes are associated. Chi-square test of independence was carried out for finding the relationship between demographic variable and the qualitative variables considered. A level of 0.05 was established a priori for determining statistical significance.

One Sample Z-Test

One sample z- test is a statistical procedure used to examine the mean difference between the sample and the known value of the population mean. In one sample z-test, the population mean is known $z = \frac{(\bar{x} - \mu_0)\sqrt{n}}{s}$. An independent sample Z test was carried out to identify whether the mean score of variables under study differ significantly with respect to demographic factors.

ANOVA

Analysis of Variance (ANOVA) is used to compare the means of more than two populations. It uncovers the main effect and interaction effects of classifications or independent variables or one or more dependent variables. ANOVA uses the F-statistic, which test the means of the groups formed by one independent variable or a combination of independent variables are significantly different. One-way ANOVA is the generalization of the t-test for independent samples with more than two groups.

Post- Hoc Multiple Comparison

Rejection of null hypothesis in ANOVA only tells that all population means are not equal. Post hoc tests are a set of comparisons between group means. Multiple comparisons were used to assess which groups mean differ from others, once the overall F-test shows at least one difference. This test involves comparing the means of all combinations of pairs of groups. Each group of participants were compared to the entire remaining group. For each pair of group the difference between group means is displayed, the standard error of difference, the significance level of difference, and a 95% confidence level. Tukey HSD (Honestly Significant Difference) test was used.
**Factor Analysis**

Factor analysis is a technique used to identify a smaller number of factors underlying a large number of observed variables. Variables that have high correlation between them and are largely independent of other subset of variables were combined into factors. Exploratory Factor Analysis (EFA) was done to explore the underlying dimensions that could have caused correlation among the observed variables. For extractions, Principal Component Analysis (PCA) with varimax rotation was used to reduce the number of variables. Since the factor analysis is based on correlation between variables, the factorability of data was ascertained by three important tests. First, an inspection of correlation matrix for coefficients of 0.3 and above was observed. Second, a Kaiser-Meyer-Olkin (KMO) measure of sample adequacy was calculated. If the KMO measure is greater than 0.6, then the factorability of data is assumed (*Tabachinick & Fidell, 2007*). Third, if the Barlett’s Test of Sphericity (BTS) value is significant, i.e., 0.05 or smaller (p<.05), then the factorability is assumed.

The researcher used the Principal Component Analysis for the factor extraction because it is simple than the other method of Principle Axis factoring (*Steven, 2002*) the criterion Eigen value greater than 1 for determining the factor. The Scree test was used to select the correct number of factors as it was considered a good solution for selecting the accurate number of factors.

Communality is used to test the suitability of the factors considered under each of the statements and higher communalities are better. It is the extent to which an item correlates with all other items. If communalities for a particular variable are low, (between 0.0-0.4) then, the variables were removed from the analysis.

While using the factor rotation, factor loadings below 0.40 were suppressed. This process produced a clear rotated component matrix, but there were items that did not have a loading over 0.4 on any of the factors. Each item that did not have a loading of .04 was reviewed in terms of its content. These items were deleted and factor rotation was conducted again. This process was continued until it produced a clean loading structure.
Confirmatory Factor Analysis (CFA) - Structural Equation Modelling (SEM)

Confirmatory factor analysis (CFA) is a type of structural equation modelling (SEM), which deals specifically with measurement models that is relationship between observed measures or indicator. In social research works, researchers need to have measures with good reliability and validity that are appropriate for use across diverse populations. Development of psychometrically sound measures is an expensive and time consuming process, and CFA is one step in the development of process. Based on the past evidence and theory of the factors that exist in the literature, the researcher specified the number of factors. Structural Equation Models (SEM) with latent variables was used to analyze relationships among variables because of their ability to model complex system (where simultaneous and reciprocal relationships may be present, such as the relationship between quality and satisfaction) and their ability to model relationships among non-observable variables while taking measurement errors into account (which are usually sizeable in questionnaire data and can result in biased estimates if ignored).

For the analysis initially an input model was developed by using AMOS-18 graphics. The rectangle represents observed factors and oval drawn in the diagram represents unobserved variables. The curved double headed arrows represent correlations or co-variances among the unobserved variables and the straight headed arrow represents the regression coefficients of the observed variables. The small circles with arrows pointing from the circles to the observed variables represent errors unique factors, which are also known as, squared multiple correlation of the standard error. The value above each rectangular box represents the R-Squared value of the observed variables. R – Square is a statistical measure of how close the data are to the fitted to the regression line, also called as the coefficient of determination. The statistic measures how successful the fit is explaining the variation of the data. It is the percentage of the response variable variation that is explained. Zero percentage indicates that the model explains none of the variability of the response data around its mean. R² of 1 indicates that the regression line perfectly fits the data.

In using SEM, it is a common practice to use a variety of indices to measure model fit. In addition to the ratio of the χ² statistic to its degree of freedom, with a
value less than 5 indicating acceptable fit, researchers recommended a handful of fit indices to assess model fit. These are the Goodness of Fit (GFI), Normal Fit Index (NFI), Standardized Root Mean Residual (SRMR), and the Comparative Fit Index (CFI). For the current model all the values satisfied the recommended level of acceptable fit.

The measures of “goodness of fit’ followed in this research are;

**Absolute Fit Measures:**
Likelihood ratio Chi-square statistic \( (p) \): usually greater than 0.05 or 0.01 is the level of acceptable fit.
Goodness of fit index \( (GFI) \): higher values closer to 1.0, indicates better fit.
Root mean square error of approximation \( (RMSEA) \): values ranging from 0.05 to 0.08 are acceptable.
Root mean square residual: smaller values are better.

**Incremental Fit Measures:**
Tukey-Lewis Index \( (TLI) \): A recommended value of TLI is 0.09 or greater. The value closure to 1.0 indicates perfect fit.
Normal fit Index \( (NFI) \): A recommended value of NFI is 0.09 or greater. The value closure to 1.0 indicates perfect fit.
Adjusted goodness–of–fit index \( (AGFI) \): A recommended value of AGFI is 0.09 or greater. The value closure to 1.0 indicates perfect fit. The value of the fit indices indicates a reasonable fit of the measurement model with data. Considering the above values, a conclusion was reached about the final model for each factor and their relationships.

**Mediation - Sobel Analysis**

In general terms “a moderator is a qualitative or quantitative variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable”. Although the systematic search for moderator variables is relatively recent, psychologists have long recognized the importance of mediating variables.

In general, “a given variable may be said to function as a mediator to the extent that it accounts for the relation between the predictor and the criterion.
Mediators explain how external physical events take on internal psychological significance. Whereas moderator variables specify when certain effects will hold, mediators speak to how or why such effects occur”. *Baron, Reuben. M and Kenny, David. A (1986).* To clarify the meaning of mediation, a path diagram as a model for depicting a causal chain is diagrammed in Figure 1.1.

![Median Path Diagram](image)

Fig: 1.1

**Median Path Diagram**

The model assumes “a three-variable system such that there are two causal paths feeding into the outcome variable: the direct impact of the independent variable (Path c) and the impact of the mediator (Path b). There is also a path from the independent variable to the mediator (Path a). A variable functions as a mediator when it meets the following conditions: (a) variations in levels of the independent variable significantly account for variations in the presumed mediator (i.e., Path c), (b) variations in the mediator significantly account for variations in the dependent variable (i.e., Path b), and (c) when Paths a and b are controlled, a previously significant relation between the independent and dependent variables is no longer significant, with the strongest demonstration of mediation occurring when Path c is zero. In regard to the last condition we may envisage a continuum. When Path c is reduced to zero, we have strong evidence for a single, dominant mediator. If the residual Path c is not zero, this indicates the operation of multiple mediating factors. A more realistic goal may be to seek mediators that significantly decrease Path c rather than eliminating the relation between the independent and dependent variables altogether. From a theoretical perspective, a significant reduction demonstrates that a given mediator is indeed potent, although not both a necessary and a sufficient condition for an effect to occur”. *Baron, Reuben. M and Kenny, David. A (1986).*
SOBEL estimates the total, direct, and indirect effects of causal variable $x_{var}$ on outcome variable $y_{var}$ through a proposed mediator variable $m_{var}$. It also calculates the Sobel test for the indirect effect as well as a percentile-based bootstrap confidence interval for estimating the indirect effect.

1.9 Period of Study

The study was based on both primary and secondary data. The pilot study was conducted between the months of January to March 2013. The primary data was collected during April-December 2013, among the retail investors of Kerala State. Sample questionnaire is given in Annexure1. The secondary data regarding the mutual fund industry was collected right from the inception year 1964 till March 2013.

1.10 Operational Concept and Working Definition

Individual investors also known as the Retail investors mean “an investor who buy and sell securities for his own behalf and not for an organization”. Retail investors typically trade in much smaller quantities than institutional investors (Bank of New York Mellon Glossary)

The unit of observation and analysis of survey is only among Individual Investors whose definition is “An individual who has currently invested (i.e. as on March 2013 in any Mutual Funds and this does not include high net worth individuals (i.e., those who saves above Rs. 5, 00,000/- per annum).
1.11 Limitations of the Study

- The study has not been conducted over an extended period of time in the stock market which will have a significant influence on investor’s investment pattern and preferences.
- Lack of knowledge, unwillingness and bias in the response of certain investors.
- Reluctance to answer personal question which may affect the reliability of the study.
- Scattered and heterogeneous nature of retail investors.

1.12 Outline of the Study /Chapter Scheme

This research work was organised into five chapters as outlined below:

**Chapter I** - Provides the introduction to the research and presents the background of the study, statement of the problem, objectives, hypotheses, the methodology adopted for the study covering the data source, sampling technique, tools and techniques of analysis and time period and limitations of the study.

**Chapter II** - Deals with the comprehensive review of literature under five heads based on the variables studied, comprising of studies in foreign countries as well as in India.

**Chapter III** - The first part highlights the mutual fund concepts, growth, development SEBI (Mutual Funds) Regulations 1996, other details in terms of number of funds, number of schemes launched, category of schemes, types of schemes, resources mobilized, redemption of funds and assets under management and future prospects. The second part deals with investment and savings in India since the year 2000.

**Chapter IV** - Gives a detailed statistics analysis of data collected from mutual fund investors in Kerala based on demographics, micro and macro factors, issues related to mutual fund investment, factors influencing the choice of mutual funds, the perception of investors, satisfaction and risk analysis.

**Chapter V** - Comprehensively summarizes the entire study and presents the finding, suggestions, conclusion and scope for future studies.
References


