CHAPTER – I
INTRODUCTION AND EXECUTION OF THE STUDY

1.1 Introduction

The savings and economic growth are closely related with each other. The impact of economic growth of a particular country can be very well felt in the increase in the disposable income of an individual. It emerged that economic reform process of 1991 had a great impact on the financial system of the country leading to an overall development of the Indian economy. India has a financial system that is regulated by independent regulators in the sectors of banking, insurance, capital markets, competition and various service sectors. The development of financial sector can be viewed as a process that enhances four critical attributes of the financial system: efficiency, stability, transparency and inclusion. The emergence of intermediation mechanisms and products that help improve on one or more of these without causing others to weaken are, therefore, a meaningful indicator of financial development. From this perspective, Mutual Funds (MFs) play an important role in the development of the financial system. First, they pool the resources of small investors together, increasing their participation in financial markets, which helps both in inclusion and the efficient functioning of markets themselves, as a result of larger volumes. Second, MFs being institutional investors, can invest in market analysis generally not available or accessible to individual investors, thereby providing services based on informed decisions to small investors. Decisions made on the basis of deeper understanding of risks and returns contribute to financial stability, besides helping to mitigate market risks for this group of investors. Third, transparency in investment strategies and outcomes, though typically mandated by regulators, is relatively easy to deliver on, so that investors can find out exactly where they stand with regard to their investments at any point of time. In present world, MFs have become a main form of investment because of its diversified and liquid features.

1.1.1 Evolution of MFs around the world

The MFs concept emerged in the year of 1822 in Netherlands but some other ideas report that MFs first came from Merchant ling back in the year of 1774. After that it was developed in the first half of the 18th century. In 1822, the concept of investment diversification was properly incorporated in the MFs through the attraction of MFs as the small investors are also able to allocate their little funds in a diversified way to lower risks. This is followed by MFs concept in Switzerland in 1849, European of
Robert Fleming set up in 1868 the first investment trust called Foreign and Colonial Investment Trust which promised to manage the finances of the moneyed classes of Scotland by spreading the investment over a number of different stocks and thereafter developed in Scotland in the 1880s. Furthermore, MFs greatly popular in Britain and France but this concept traveled to USA in the 1890s. Finally, the MFs highly accepted in the 1920s to 1930s through the investment done but MFs were not like the modern day MFs whereas modern day MFs developed in the year of 1924. L. Sherman Adams was introduced the world's first modern day MFs in Boston through the MIT (Massachusetts Investors Trust Fund) Fund but the funds were available from 1928. At present, MIT is known as MFS Investment Management Company. After the MIT Fund survived the stock market crash of 1929, more MFs began to crop up with different regulations, leading to the massive MFI throughout the world. Innovations in products and services increased the popularity of MFs in the 1950s and 1960s. The first international stock mutual fund was introduced in the US in 1940. In 1976, the first tax-exempt municipal bond funds emerged and in 1979, the first money market mutual funds were created. With few exceptions, mainly in Asia, MFs grew explosively in most countries around the world during the 1990s. Since 1996, MF assets have exceeded bank deposits. The MFI and the banking industry virtually rival each other in size. A MF is a type of Investment Company that gathers assets from investors and collectively invests those assets in stocks, bonds, or money market instruments.

1.1.2 Evolution of MFI in India

The evolution of Indian MFI can be broadly divided into various stages. Firstly, the MFI in India has evolved in the Parliament Act (52 of 1963) with the formation of Unit Trust of India, at the initiative of the Government of India and RBI. The Unit Trust of India (UTI) was incorporated in February 1964 and its first fund was known as Unit Scheme (US) 1964, popularly called US 64. Further, the above act proposed setting up an Asset Management Companies (AMCs) with the purpose of creating an instrument for channeling investments. In 1978 UTI was de-linked from the RBI and the Industrial Development Bank of India (IDBI) took over the regulatory and administrative control in place of RBI. MFI is a single player monopoly on the back of strong regulatory frame workup to 1987 and end of 1988 UTI controlling funds worth around Rs.6,700crores of Assets Under Management (AUM). The second phase of evolution of the MFI was witnessed between 1987-1982 with the advent of public sector funds that entered the market set up by two different sectors like banks and insurance corporations (Refer Table – 1.1). These joined the fray, thus bringing to an end the monopoly that UTI
enjoyed in the market. Moreover, new era started in the third phase (1993-2003) of evolution of MFI through the entry of private sector funds. The Kothari Pioneer (now merged with Franklin Templeton) was the first private sector MF registered in the year of 1993 and Security Exchange Board of India (SEBI) MF Regulations were substituted by a more comprehensive and revised MF Regulations in 1996. Thus, by 1993 the MF industry emerged with nine AMCs, managing funds worth approximately Rs 47,004 crore. Thereafter, MFI under the SEBI MF Regulations 1996 permitted the entry of private sector MFs into the MFs market. The entry of private sector MFs offered wider range of MFs schemes and increased competition in MFs market. This is followed increase in the number of MF houses, then liberalization influenced many foreign companies setting up funds in India and also the industry has witnessed several mergers and acquisitions. These influenced the growth of MFI in India and as a result in the beginning in the year 2003, there were 33 AMCs with total assets of Rs. 1,21,805 crores. The fourth phase evolution of MFI started in Feb’ 2003 and followed the repeal of the UTI Act 1963 UTI was bifurcated into two separate entities. One is the Specified Undertaking of the UTI with AUM of Rs.29,835 crores as on Jan’2003, representing broadly, the assets of US 64 scheme, assured return and certain other schemes. The Specified Undertaking of UTI, functions under an administrator and under the rules framed by Government of India and does not come under the purview of the MF Regulations. The MFI has grown tremendously since 1991. The number of MFs has increased from one in 1964 to 10 in 1991, and 31 in 2004. At the same period the structure of MFs in India covers 8 public sector and 23 private sector funds. Besides UTI, the former includes four funds sponsored by the public sector banks. The statistics reported at the end of June’2009, 35 AMCs managing large number of schemes and controlling funds worth Rs 6,70,936 Crore. Indian MFI today is one of the fastest growing sectors in the Indian capital and financial markets. With dramatic improvements in quantity as well as quality of product and service offerings in recent years, MFs AUM grew by 96% between the end of 1997 and June 2003 and as a result it rose from 8% of GDP to 15%.

<table>
<thead>
<tr>
<th>Table – 1.1: Evolution of MFI in India – Second Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sector</strong></td>
</tr>
<tr>
<td>Banking</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
1.1.3 Financial Saving Pattern through Various Instruments in India

The savings rate was 32.5% of GDP in 2008–09 compared to 22.3% ten years ago in 1998–99. The contribution of the household sector to savings is 70.0%. Ratio has increased significantly; financial savings have remained around 50% of household savings. Within financial savings, the share of bank deposits has increased from 33% in 2000-01 to 55% in 2008-09. Achieving higher rates of growth would call for higher financial savings and this in turn requires much greater penetration of banks and greater involvement of other financial intermediaries like insurance companies, MFs and pension funds. The comparison of various investment instruments are given in the table below.

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Risk</th>
<th>Returns</th>
<th>Liquidity</th>
<th>Taxation</th>
<th>Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>No LTCG</td>
<td>Low</td>
</tr>
<tr>
<td>Financial Institutions</td>
<td>High</td>
<td>Moderate</td>
<td>Low</td>
<td>Taxable</td>
<td>Moderate</td>
</tr>
<tr>
<td>bonds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Company Fixed deposits</td>
<td>High</td>
<td>Moderate</td>
<td>Low</td>
<td>Taxable</td>
<td>Low</td>
</tr>
<tr>
<td>Bank Deposits</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Taxable</td>
<td>High</td>
</tr>
<tr>
<td>Corporate debentures</td>
<td>High</td>
<td>Moderate</td>
<td>Low</td>
<td>Taxable</td>
<td>Moderate</td>
</tr>
<tr>
<td>KVP</td>
<td>Low</td>
<td>Moderate</td>
<td>Low</td>
<td>Tax free</td>
<td>High</td>
</tr>
<tr>
<td>PPF</td>
<td>Low</td>
<td>Moderate</td>
<td>Low</td>
<td>Tax free</td>
<td>High</td>
</tr>
<tr>
<td>NSC</td>
<td>Low</td>
<td>Moderate</td>
<td>Low</td>
<td>Tax free</td>
<td>High</td>
</tr>
<tr>
<td>MFs</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>No tax</td>
<td>High</td>
</tr>
</tbody>
</table>

1.1.4 Trends in Household Sector Savings in India

In the conventional national accounting system, domestic saving falls into three broad components namely, household savings, business savings and government savings. Household saving represents savings of the household sector out of the
disposable income. In India, total savings have increased considerably over the years. Household savings in general and savings in the form of financial assets in particular exhibited remarkable growth since late eighties. The aggregate household savings as share to GDP, which was only 0.4 percent during 1951-1952, went up to 4.2 percent in 1981-1982, then to 25.03 percent in 2001-2002 and stood at 40.57 percent in 2008-2009. The growth of household savings during the decade of eighties has been facilitated by a simultaneous increase in physical as well as financial assets. Household savings in physical assets increased from 0.22 percent in 1951-1952 to 1.3 percent in 1981-1982, then to 13.98 percent in 2001-2002 and stood at 15.23 percent in 2008-2009. The financial savings as a percentage of GDP has also gone up from 0.01 percent in 1951-1952 to 1.30 percent in 1981-1982, then to 11.58 percent in 2001-2002 and stood at 13.02 percent in 2008-2009. However, within household sector savings, the share of physical savings has come down over the years, giving place to financial savings. For instance, the share of physical savings which include property, gold, silver etc., has come down from 97.44 percent in 1951-1952 to 51.1 percent 1981-1982, then to 50.91 percent in 2001-2002 and stood marginally up at 53.9 percent in 2008-2009. This indicates that the preference of the people for financial assets which include bank deposits, shares and debentures, Life insurance funds, Pension and provident funds, investment in small savings and savings in MFs. The share of MFs in Household financial savings shows that 1.2 percent in March’2004 and it crossed 7 percent in March’2008. Generally, the share of financial savings stood at 46.1 percent in 2008-2009, increasing from only 2.56 percent in 1951-1952.

1.1.5 Rural Households’ Savings and Economic Development

Rural households’ savings represent that part of national income which is not spent on consumption in a year out of the disposable income. The rural household sector represented by individuals occupies a strategic place among various economic units in a country as it contributes substantially to the domestic saving efforts because of 121 crore population in India but 83.3 crore from 6, 40,867 rural villages. An understanding of the savings behavior of this sector is of crucial importance in devising appropriate saving policies. The savings of rural households is the main source of MFs and its industry business expansion. Now-a-days everyone talks about financial inclusion including Government of India. Financial Inclusion therefore, is delivery of not only
banking, but also other financial services including MFs. In India 72,825 financially excluded villages available by 2012 and the key aspect of financial exclusion is the lack of “financial education and advice”. For that reason, financial education is important to both the security of individuals and the security of nations. As compared to urban people the rural people have low level of awareness on finance matter. To the rural people the financial literacy is very important to make efficient decision on their finance. So, there is a latent need for innovative products that can address the financial needs of this segment. The Indian MFI is poised to play a significant role by harnessing the emerging technological innovations and regulatory measures. Moreover, the MFs companies must increase their penetration in smaller cities and rural areas while financial literacy should be delivered at affordable, though market driven costs among the uneducated also.

1.2 Statement of the Problem

The world’s population can be divided into three basic segments based on the economic pyramid. Majority of them would lie at the bottom of the pyramid with annual income less than $1000. This economic inequality must be overcome to ensure the welfare and happiness of people all around. The need of the hour is to develop innovative products or services for these people. The advantage of MFs for the rural population is one such solution. The presence of MFs institutions helps in mobilizing the rural financial saving in the economy’s financial system and the efforts should be made to further enhance the participation of the rural households in these MFs institutions because rural households need relatively large sums of money for life cycle needs, emergencies and investment opportunities because the fund would require minimal investment on the part of the people in the rural areas and will be designed in such a manner that it helps them increase their financial position with respect to the other strata of the society. The fund will not only boost the income of the rural households but will also increase their spending capacity thereby leading to the overall welfare and development of the regions in which they reside. The role of MFs in promoting savings continues to be insignificant in India because the proportion of people investing in MFs is less than 10%. One of the major reasons for relatively low activity of MFs in India is that penetration, especially in the rural areas remains small. This is an important issue from the perspective of financial inclusion of low-income households in the formal financial system. For that reason, this study concentrates on acceptance of MFs among the rural households. It is generally perceived that MFs are
popular mainly with the middle and high-income groups and have not been found to be an attractive investment avenue for the low-income groups. Thus, if the sector has to grow fast, it needs to devise appropriate schemes to attract the saving of low-income groups, especially in rural areas. This is the only way to ensure participation of all categories of investors in the financial of the economy as a whole. In view of this, this study reviewed eighty studies and found out the following Research Gaps

1) No author focused on the growth of MFI in India with respect to its overall business like, gross mobilization of funds, redemption of funds.

2) Investors’ perceptive to related previous studies included in the review of literatures focusing on urban areas only. Therefore, this study moves to rural areas.

3) No author measures the acceptance level of MF and importance level of each influencing factor under MFI.

The above research gaps raised the following questions in the mind of the researcher.

- Is the Indian MFI making a consistent growth?
- What are the factors influencing the acceptance of MFs by the rural households?
- What is the acceptance level of MFs among rural households?
- What are the preferred MFs schemes among rural households?
- What is the importance level of factors on affecting to invest in MFs schemes?
- What is the reason for non-acceptance of MFs among the rural households?

In order to find out the answers for the above raised issues the researcher has undertaken this research work titled “MUTUAL FUND: ITS INDUSTRIAL GROWTH AND ACCEPTANCE OF RURAL HOUSEHOLDS” with the following objectives.

1.3 Objectives of the Study

- To evaluate the growth of Mutual Fund Industry in India
- To explore the influencing factors on acceptance of Mutual Funds by the Rural Households
- To assess and analyze the acceptance level of Mutual Funds among the Rural Households
- To study the fund/scheme preference of Rural Households
To assess and analyze the importance level of factors affecting investment in Mutual Fund schemes among Rural Households

To investigate the perceived obstacles to the non-acceptance of Mutual Funds among the Rural Households

1.4 Hypotheses of the Study

In consistent with the objectives the following hypotheses were formed by the researcher:

- Ho1: There is slow growth of MFI in India.
- Ho2: \( f_1, f_2, f_3, ... f_n \) independently will have a negative effect on acceptance of MFs by the rural households.
- Ho3: Related factors \( (f_1, f_2, f_3, .... f_n) \) have lesser influence on the acceptance of MFs by the rural households.
- Ho4: There is no significant relationship of the rural households’ acceptance level of MFs among the various groups.
- Ho5: There is no significant association of the rural households’ investment among the various groups.

1.5 Scope of the Study

- This study would help to know the growth of MFI in India and its future performance.
- The study would also help to understand the influencing factors on acceptance of MFs in the rural households.
- This study would bring out the extent of acceptance of MFs by the rural households, preferred avenue of MFs schemes and importance of various factors under MFs.
- This study gives the reasons for non-acceptance of MFs by the rural households.
- This study would help to know the reasons for non-acceptance of MFs among the rural households.
1.6 Research Design

The present study has been done by adopting both analytical and empirical research design.

1.6.1 Data and Source

Both secondary and primary data related to MFs are used in this study.

**Secondary data** helps to find out the growth of MFI in India. It will be determined through the funds mobilization, redemption of funds and net inflow of funds. Further, MFs scheme-wise resource mobilization and trends in transaction on stock exchanges also studied. The secondary data related to MFs has been collected from website on AMFI, Reserve Bank of India and SEBI. Further, secondary sources related to theoretical inputs of this thesis were collected from books, journals, various online–free journals and websites.

**Primary data** helps to find the overall acceptance of MFs by the rural households like, awareness of MFs, responsible factors on its acceptance, level of acceptance, Investment in MFs, preference of MFs schemes, purpose of saving in MFs, preference of MFs organization, factors influencing selection of MFs organization, and importance level factors affecting investment in MFs. Further, perceived obstacles to non-acceptance of MFs also studied with the help of primary data. The data related to above mentioned areas collected through the well-framed questionnaire-cum-interview schedule and this data collection instrument cover all the objectives of the present research work.

**Questionnaire–Cum-Interview Schedule (Refer to Annexure):** This questionnaire-cum-interview schedule is an attempt to assess and analyze the overall acceptance of MFs by the rural households. It has totally four parts like demographic factors, acceptance of MFs, MFs schemes preference of rural households and reasons to non-acceptance of MFs. Based on the above information, 500 valid responses collected from rural households in Kancheepuram District of Tamilnadu State, India. Finally, the following variables are considered for the conduct of the current study.
<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Dependent variables</th>
<th>Common variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Gender</td>
<td>1) Awareness of MFs</td>
<td>1) Sources of awareness</td>
</tr>
<tr>
<td>2) Age group</td>
<td>2) Acceptance level of MFs</td>
<td>2) Influencing factors on acceptance of MFs</td>
</tr>
<tr>
<td>3) Marital status</td>
<td>3) Average acceptance of MFs</td>
<td>3) Purpose of investment in MFs</td>
</tr>
<tr>
<td>4) Educational</td>
<td>4) Investment in MFs</td>
<td>4) Preferred mode of payment</td>
</tr>
<tr>
<td>qualification</td>
<td>5) Amount of investment in MFs</td>
<td>5) Influenced persons towards investment decisions in MFs</td>
</tr>
<tr>
<td>5) Occupation</td>
<td>6) Preference of MFs schemes</td>
<td>6) Preference of MFs organization</td>
</tr>
<tr>
<td>6) No. of earning family members</td>
<td>7) Period of investment in MFs</td>
<td>7) Influencing factors on reasons for selection of MFs organization</td>
</tr>
<tr>
<td>7) Family income (Rs. Per month)</td>
<td>8) Importance level of factors affecting to invest in MFs schemes</td>
<td>8) Reasons to the non-acceptance of MFs</td>
</tr>
<tr>
<td>8) Proportion of saving</td>
<td></td>
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</tr>
</tbody>
</table>

1.6.2 Sampling area and Framework

**India:** This study finds out growth of MFI in the Indian context using the two stage sampling technique. According to this technique, the first stage studied about growth of MFI and in the second stage MFI grouped into public sector, private sector and UTI.

**Tamilnadu:** Sampling area of present research work consists in rural areas of Kancheepuram District of Tamil Nadu State. Tamil Nadu has high population in rural areas (37.19 Million) compared to urban areas (34.95 million) as per 2011 Census and literacy rate in the rural area is 73.8%. Sampling District is located in north east of the Tamilnadu state and 2nd most populous district of the State. The total geographical area of Kanchipuram district is 4,432Sq. km. According to 2011 census, the population of the district is nearly 40 Lakh. Kancheepuran have ten taluks with 1137 revenue villages. Among the ten taluks, this study select for Madhuranthangam taluk because it has highest number (196) of revenue villages compared to other taluks. The rural households located in the revenue villages of Avirimedu, Baburayanpettai, Chinnavenmani, Irumbedu, Kattugudalur, Edayalam, Melavalam, Eruvakkam,
Alapakkam and Thirumukkadu using multi-stage sampling method. Finally, the selected revenue villages are giving fifty valid responses towards overall acceptance of MFs.

1.6.3 Period of study

The study period is determined based on the availability of data. The data was collected from 2000-2001 to 2009-2010. In addition, the primary data were collected during the period from September to December 2012.

1.6.4 Pilot study

Before finalizing the questionnaire-cum-interview schedule, a small survey was conducted from fifty rural households in Madhuranthangam taluk of Kancheepuran District using convenience sampling method. Based on the suggestions collected from the rural households in this survey, the questionnaire-cum-interview schedule was re-framed and finalized.

1.6.5 Framework of analysis

The collected data were analyzed with the help of various appropriate statistical applications and they are clearly explained below.

1.6.5 (a) Time series Analysis: Method of Least Square Trend

Time series data are a set of observations taken at specified times either years/months/weeks/days/hours/minutes. The foremost objectives of this analysis are to measure the changes of data/observation between the periods and prediction of future on the basis of past experience. Time series is said to have four components like, secular trend, seasonal variations, cyclical variations and irregular movements. But, present research work focuses on secular trend analysis, because it studies the movements of data either upward or downward or constant direction over a period of time using linear trend by the method of least squares. This is the best method for obtaining the trend values. It provides a convenient basis for obtaining the line of best fit in a series. The line of the best fit is a line from which the sum of the deviations of various points on either side is zero (actual values of Y from the computed values of \( Y_c \)). Further the sum of the squares of the deviations of the actual values of Y and computed values of \( Y_c \) is least. So, it is called the method of least squares and line obtained by this method is called the line of best fit or straight line trend and it is derived from following equation

\[ Y_c = a + bx \]

Where,
\[ \text{Y}_c = \text{Trend values for a period} \]

\[ \text{a} = \text{Y intercept / trend value at origin when} \quad \text{X} = \text{mid value (This study not satisfies ‘0’ condition)} \]

\[ \text{b} = \text{the amount of change in trend value per unit (i.e., per year)} \]

\[ \text{x} = \text{Time unit (i.e., per year)} \]

The current study covered the following three things

- \text{Origin (Mid-year) – 2004-2005 to 2005-2006}
- \text{X unit – one year}
- \text{Y unit – measured value of funds mobilization, redemption and net inflow of funds}

Moreover, the values of two constants ‘a’ and ‘b’ are estimated by solving the following two normal equations.

\[ \sum Y = Na + b\sum X \quad \text{and} \quad \sum XY = a\sum X + b\sum X^2 \]

Where,

\[ N = \text{Number of years for this study} \]

The middle period of this study is considered for origin and deviations are taken from the 2004-2005 to 2005-2006. So, \( \sum X \) is to become zero. It says that there is no gap in the available data for this research. Further, \( \sum X = 0 \), the above normal equations derived for the finding of constants ‘a’ and ‘b’ will be

\[ a = \frac{\sum Y}{N} \quad \text{and} \quad b = \frac{\sum XY}{\sum X^2} \]

This provides that the constant ‘a’ is simply equal to the means of ‘y’ values and the constant ‘b’ gives the rate of change for a particular period.

1.6.5 (b) Descriptive statistics

Most of the research studies examine the univariate data using a percentage/frequency table to report the number of percentages among the various groups of the participants and their views about particular event/truth according to the nature of research problem. In this section two types of descriptive analyses are illustrated for categorical data. They are Frequency table and cross tabulation.

**Percentage/ Frequency Table:** Each of the single variables (e.g. personal characteristics) is an observation that places the subject or entity into two or more categories and observe
summaries of these variables, it was typically given as counts (the number of subjects placed into each category) and/or the corresponding percents.

**Cross tabulation:** It consists of multiple variables and used for summary analysis of all factors. This study used the data in which both the dependent and the independent variable are categorized. Multivariate data can be analysed with the cross-tabulation. The simple (percent) tabulation may reveal only the fact, but the cross tabulation reveals the causes of the fact.

**Mean**

The most popular and widely used measure of representing the entire data by one value is called as “Mean”. Its value is obtained by adding together all the items in the ‘X’ series and then dividing the total number of observations (N). It is reflected by the following formula

\[
\text{Mean} = \frac{\sum X}{N}
\]

Where,

\(\sum X\) = Adding all the values of X

N = Number of items or observations.

**Standard Deviation (\(\sigma\))**

The standard deviation is also known as standard error or mean error. It is the root square of deviation of values from the arithmetic mean. The standard deviation measures the absolute dispersion, which explains how widely the values in a data set spread around the mean (i.e., Uniformity in deviation). The calculation of standard deviation through the following formula

\[
\sigma = \sqrt{\frac{\sum (x - \bar{x})^2}{N}}
\]

Where,

\(\Sigma\) = Sum of

\(x\) = Individual Score

\(x\text{Bar}\) = Mean of all scores

N = Number of observations
Co-efficient of variation (CV)

To test the consistency of growth performance, the co-efficient of variance has been used. CV is applied where the variability of two or more than two variables are compared. That series for which the CV is greater is said to be more variable or conversely less consistent, less uniform, less stable or homogeneous and vice-versa. The formula to find out the CV is

\[ CV = \frac{SD}{Mean} \]

Compound Annual Growth Rate (CAGR)

CAGR helps to the year-over-year growth rate of an investment over a specified period of time. The calculation method of CAGR is more than one but this method used for the following way.

The CAGR is calculated by taking the \( n^{th} \) root of the total percentage growth rate, where ‘\( n \)’ is the number of years in the period being considered.

This can be written as follows:

\[ CAGR = \left( \frac{Ending\ Value}{Beginning\ Value} \right)^{\left( \frac{1}{\#\ of\ years} \right)} - 1 \]

1.6.5 (c) One – Way ANOVA

One-way analysis of variance is the simplest form. It is an extension of the independent sample t-test and can be used to compare more than two groups with ordinal or interval scaled variables and the null hypothesis is taken that the means of different sample groups do not differ significantly. Inference of One Way ANOVA collected from “\( f \)” value and it is calculated by using the following formula

\[ f = \frac{Variance\ between\ samples}{Variance\ within\ samples} \]

The calculated value of “\( f \)” is compared with the table value at a specified level of significant value. If the calculated value is more than the table value the hypothesis is rejected and the difference between sample means is considered to be significant and vice-versa. But, SPSS output interpreting a significant (\( P \)) value is less than 0.05, it can be concluded that there is a significant difference among the various groups and vice-versa. When a significant effect has been found using analysis of variance, we still do not know which means differs significantly. In that case, it is required to conduct post hoc multiple comparisons between pairs of treatments through Bonferroni technique and Duncan test.
1.6.5 (d) Independent sample t-test

Independent sample t-test is a statistical technique that is used to analyze the mean comparison of two independent groups. In the independent samples t-test, when we take two groups from the same population, then the mean of the two samples may be identical. But when samples are taken from two different populations, then the mean of the samples may differ. In this case, independent sample t-test is used to draw conclusions about the means of two populations, and tell whether or not they are similar. The ‘t’ statistic is derived from the following formula:

\[ t = \frac{\bar{X}_1 - \bar{X}_2}{S} \sqrt{\frac{n_1 n_2}{n_1 + n_2}} \]

Degree of freedom consists (V)

\[ V = n_1 + n_2 - 2 \]

Where,

\( S \) – denotes combined standard deviation, it can be found through the following formula:

\[ S = \sqrt{\frac{\sum (X_{1} - \bar{X}_1)^2 + \sum (X_{2} - \bar{X}_2)^2}{n_1 + n_2 - 2}} \]

\( \bar{X}_{1} \) = Mean of the first group
\( \bar{X}_{2} \) = Mean of the second group
\( n_1 \& n_2 \) = are the sample sizes of the first and second group respectively.

Finally, the result is decided, when the calculated ‘t’ value is greater than the table value of the predetermined significance level. Hypothesis is rejected when the result is that the means of the two groups are different and vice versa. Here, significant value is used to make the statistical decision about the mean of the two groups. If the significant value is less than the 0.05 then we can say that the means are significantly different and vice-versa.

1.6.5 (e) Chi-square test

The Chi-square test is an important test among the several tests of significance developed by statisticians. It is statistically measured and used in the context of
sampling analysis for comparing an obtained variance to a theoretical variance. As a non–parametric test, it can be used to evaluate the contingencies between two nominal measures. The contingency may involve the comparison of two or more populations on a nominal measure or two nominal variables. In the present study, the Chi-square test is used to test the association between two attributes.

The chi-square statistic is to be carried out through the difference between the observed and the expected frequencies in the cells of the contingency table using the following formula.

$$\chi^2 = \sum \frac{(O_i - E_j)^2}{E_j}$$

Where,

- $\chi^2$ = Pearson's Chi-square statistic
- $O_i$ = an observed frequency
- $E_j$ = an expected frequency

The table value of chi-square is calculated by $(R-1)(C-1)$ degree of freedom at required percent level of significance whereas $R$ and $C$ denote Rows and Columns of the contingency table. If the calculated $\chi^2$ value is greater than the table value, it is concluded that there is a relationship between the two nominal measures and vice-versa. Instead of this concept we can use Asymptotic Significant value. If it comes out to be greater than 0.05, it is concluded that there is no relationship between the two nominal measures and vice-versa.

1.6.5 (f) Measuring the Association of Nominal Data

When the $\chi^2$ analysis reveals that two attributes are associated to each other, the discussion of correlation statistics is used to measure degree of association between two nominal variables through the Cramer’s $V$, Phi – coefficient ($\Phi$) and Contingency Coefficient ($C$). Given the nature of nominal data we calculate each of these statistics; the obtained values for each statistics will always fall in a range between -1 and +1.

**Cramer’s $V$:** It is used when the number of possible values for the two nominal variables is unequal but it is found out based on the $\chi^2$ statistical values, using the formula:

$$V = \sqrt{\chi^2 / n (k - 1)}$$

Where,

- $\chi^2$ = the $\chi^2$ value for the data
- $n$ = the total number of observations
k = the number of rows or columns, whichever is smaller

**Phi coefficient (Φ):** It helps to evaluate the association between two dichotomous variables. When this is true, that data matrix will always have a simple 2 X 2 design and the co-efficient is directional for it takes a range of values from -1 to +1. The Φ statistic is calculated with

$$\Phi = \frac{bc - ad}{\sqrt{(a+b)(c+d)(a+c)(b+d)}}$$

**Contingency co-efficient (C):** The C is used when there are three or more values for each nominal variable, as long as there are an equal number of possible values leading to the construction of a data matrix that has an equal number of rows and columns. The contingency coefficient is directly related to the $\chi^2$ test, it can be generated in the following formula.

$$C = \sqrt{\frac{\chi^2}{n}} + \frac{\chi^2}{n}$$

Where,

n= the sample size.

**Lambda (λ):** It is used to measure the association between two nominal variables from three different perspectives. First λ can be used as a symmetrical measure of association, and in this case neither variable is treated as independent. This test fully based on observed data. The formula is

$$\lambda = \frac{\sum f_r + \sum f_c - (F_r + F_c)}{2n} - (F_r + F_c)$$

Where,

$f_r$= the largest frequency in each of the rows of the table

$f_c$= the largest frequency in each of the columns of the table

$F_r$ = the largest marginal frequency for the rows

$F_c$ = the largest marginal frequency for the columns

n= the sample size

The above analysis represents the mutual association between the two nominal variables.

**1.6.5 (g) Pearson (r) Correlation co-efficient**

Correlation is the measurement of the degree to which changes in one variable are associated with changes in another variable. It is based on the difference between
the observed values of each variable and its arithmetic mean. A perfect positive correlation will be +1 and a perfect negative correlation will be –1 whereas other values of correlation will be within the range of +1 to –1. The correlation coefficient is calculated with algebraic formula, as given below, of x and y variables

\[ r = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}} \]

In addition, the spearman’s rank correlation \( r_s \) coefficient is appropriate technique when there are two variables both of them are measured on ordinal scale. The formula for calculating rank correlation is as below.

\[ r_s = 1 - \frac{\sum d^2}{n (n^2 - 1)} \]

Where,

\( x = \) Deviation of each case from the mean x
\( y = \) Deviation of each case from the mean y
\( \sum xy = \) Value of covariance
\( x^2 = \) Square of each x deviation
\( y^2 = \) Square of each y deviation

The calculated value of \( r \) is revealed that the magnitude of relationship in the following criteria

<table>
<thead>
<tr>
<th>Correlation value</th>
<th>Relationship between variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.4 to 0.8</td>
<td>Moderate / Medium</td>
</tr>
<tr>
<td>&gt;0.8</td>
<td>High / Strong/Close</td>
</tr>
<tr>
<td>&lt;0.4</td>
<td>Low / Less</td>
</tr>
</tbody>
</table>

In addition, the researcher is interested in finding out the significant test through the calculating ‘t’ value and it is used by the following formula

\[ t = \frac{r \sqrt{n-2}}{1 - r^2} \]

Where,

\( t = \) calculated value of student’s \( t \)
\( n = \) number of samples

1.6.5 (h) **Step-wise Multiple Regression**
Regression analysis is the statistical technique that identifies the relationship between two or more independent variables: a dependent variable, whose value is to be predicted, and independent or explanatory variables, about which knowledge is available. The technique is used to find the equation that represents the relationship between the variables. A step-wise multiple regression analysis can show that the relation between independent variables and dependent variable is linear, using the equation

\[ Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + \ldots \]

1.6.5 (i) Factor analysis

Factor analysis is a generic name given to a class of multivariate statistical methods whose primary purpose is data reduction and summarization. Factor analysis identifies common dimensions of factors from the observed variables that link together the seemingly unrelated variables and provides insight in the underlying structure of the data. The common intention of factor analytic technique is to find way of condensing (summarizing) the information contained in a number of original variables into a smaller group of new composite factors with a minimum loss of information. In this current study, the Principal Component Analysis (PCA) was used because it is a variable reduction procedure. Further, varimax rotations have been used in order to simplify the factor structure by maximizing the variance of a column of pattern matrix because it is one of the most popular methods used in several social sciences research papers. In addition Eigen value is also used; it helps to find out the amount of variance in overall data. Finally, determination of the factors based on the factor score are estimated for each factor with a new name given about grouped variables. Below is the general form for the formula to compute scores on the first component extracted (created) in a principal component analysis

\[ F_i = W_{11}X_1 + W_{12}X_2 + \ldots + W_{ik}X_k \]

Where,

\( F_i \) = Estimate of the \( i^{th} \) factor
\( W_{ij} \) = Factor (weight) score co-efficient
\( k \) = Number of variables

1.6.5 (j) Garrett’s Ranking Technique

This technique was adopted, where the respondents were asked to rank their preference according to the magnitude of the particular attribute among the several
attributes. The orders of merit given by the students were converted into ranks by using the techniques.

\[
\text{Percent position}=100 \left( \frac{R_{ij} - 0.5}{N_j} \right)
\]

Where,

\( R_{ij} \) = Rank given for the \( i^{th} \) sources by the \( j^{th} \) respondents
\( N_j \) = Number of sources ranked by the \( j^{th} \) respondents

The percentage position of each rank thus obtained was converted into scores by referring to the table given by Hengry Garrett. Then for each factor of the scores of individual respondents are added together and divided by the total number of respondents for whom the scores were added. These mean scores for all the sources is to consider for the purpose of find High to Low mean scores and inferences were drawn.

**1.6.5 (k) Wilcoxon-Mann-Whitney test**

Mann – Whitney U test is a non-parametric method in statistical work and it is an alternate for t-test. This test makes it possible to work with very small samples and does not require conditions. It is used to determine whether there is any significant difference between two related samples based on rank of the combined data from low to high.

The next step is to sum up the ranks of any sample and conduct analysis through appropriate formula. If the tabulated probability is greater than the values of significant level (5 percent, value is 0.05) the null hypothesis is accepted and vice versa but it is derived from SPSS output. The Mann-Whitney U statistic is defined as:

\[
U = \frac{n_1 n_2 + n_1 (n_1 + 1)}{2} \sum R_i
\]

Where,

\( n_1 \) and \( n_2 \) = sample size
\( \sum R_i \) = Sum of Ranks

Mean sample statistics = \( \frac{n_1 n_2}{n} \)

Standard Error of U statistics = \( \sqrt{\frac{n_1 n_2 (n_1 + n_2 + 1)}{12}} \)

If the sample size is more than 8, with the given level of statistical significance, the test will report whether the calculated value of U test statistic falls within the
acceptance region or not. The U statistic can further be interpreted by using the Z statistic (ignoring Signs) based on five percent level of significant value (0.05).

However if the Z value falls within the 0.05 then there is a significant evidence between the two groups and reject the null hypothesis.

1.6.5 (l) Kruskal-Wallis H test

It is a non-parametric test, introduced in 1952 by Kruskal and Wallis. It is a k-sample extension of the two sample Man-Whitney test. It is used to determine whether there is any significant difference between two related samples based on rank of the combined data from low to high. It requires that the random variable has an underlying continuous distribution. Thus, the Kruskal-Wallis H test is computed from the following formula

\[ H = \frac{12}{N(N+1)} \left[ \frac{R_1^2}{N_1} + \frac{R_2^2}{N_2} + \frac{R_k^2}{N_k} - \frac{3(N+1)}{2} \right] \]

Where,

- \( N \) = Total number of samples
- \( R \) = Is the rank sums of each K sample
- \( N_1, N_2 \) and \( N_k \) = is the number of each sample

Further, the computed value of H test is compared to the chi-square table with determined degree of freedom (\( V = K-1 \)). Computed value falls within the range of table value, the null hypothesis is accepted. Thus, it says that there is no significant difference of particular event among the various groups.

\[ V (d.f) = K-1 \]

Where, \( K = \) total number of sample groups

1.6.5 (m) Cluster Analysis

Cluster analysis involves deciding on a set number of clusters to extract. Objects are then moved around between clusters so as to make objects within a cluster as similar as possible and objects between clusters as different as possible. It has been conducted in order to analyze the various clusters of customers that exit in our data and how they differ, or are to similar to each other in their perception towards reasons for not investing.
1.7 Limitations of the study

This study is subject to certain limitations which are given as under:

1. This study does not measure the awareness of MFs in the rural households.

2. Considering availability of sufficient data, the study period is limited to 10 years to measure the growth of MFI in India.

3. Statements are restricted to the researcher’s judgment regarding the measure of acceptance level of MFs by the rural households.

4. Sample sizes of the rural households are fixed depending upon the researcher’s interest.

1.8 Layout of thesis

The research thesis is arranged into the following seven chapters

Chapter – I: Introduction and Execution of the Study

This chapter deals with introduction, statement of the problem, objectives, and hypotheses of the study, scope of the study, research methodology with data and source, data collection instrument, sampling area and framework, period of study, pilot study, framework of analysis with detailed statistical theories and limitations of the present research.

Chapter II: Review of Literature

This chapter deals with the previous studies in this/related area.

Chapter – III: Mutual Fund – An Overview

This chapter presents to general background of the MFs like its classification, working, structure, view of major MF organizations, benefits of MF, Unit holding pattern of MFs, AUM in the MFI etc. as well as performance MFs around the world.

Chapter IV: Growth of Mutual Fund Industry in India

This chapter presents the analysis related to growth of MFI based on the secondary data during the study period from 2000-2001 to 2009-2010.

Chapter – V: Acceptance of MFs by the Rural Households

This chapter presents an elaborate discussion exploring the influencing factors on acceptance of MFs in the rural households.
Chapter – VI: Acceptance Level of Mutual Funds

This chapter dealt with overall impact of MFs among the various households in the rural areas like acceptance level of MFs, respondents’ investment in MFs, MFs scheme preference, importance of factors affecting investment in MFs etc.

Chapter – VII: Findings, Suggestions and Conclusion of the Study

This chapter brings out the major findings, suggestions and conclusion arrived at from the results of the research.