CHAPTER - II

REVIEW OF LITERATURE
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RESEARCH METHODOLOGY
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REVIEW OF LITERATURE & RESEARCH METHODOLOGY

Mutual funds attracted the interests of academicians, researchers and financial analysts mostly since 1986. A number of articles have been published in financial dailies like economic times, business line and financial express, periodicals like capital market, Business India etc., and in professional and research journals. Literature Review on performance evaluation of mutual fund is enormous. Various studies have been carried out in India and abroad to evaluate the performance of mutual funds schemes from time to time. A few research studies that have influenced substantially in preparing the thesis are discussed below in this chapter.

2.1 Review of Literature

Jack Treynor (1965) developed a methodology for performance evaluation of a mutual fund that is referred to as reward to volatility measure, which is defined as average excess return on the portfolio. This is followed by Sharpe (1966) reward to variability measure, which is average excess return on the portfolio divided by the standard deviation of the portfolio.

Sharpe (1966) developed a composite measure of performance evaluation and imported superior performance of 11 funds out of 34 during the period 1944-63.

Michael C. Jensen (1967) conducted an empirical study of mutual funds in the period of 1954-64 for 115 mutual funds. The results indicate that these funds are not able to predict security prices well enough to
outperform a buy the market and hold policy. The study ignored the gross management expenses to be free. There was very little evidence that any individual fund was able to do significantly better than which investors expected from mere random chance.

Jensen (1968) developed a classic study; an absolute measure of performance based upon the Capital Asset Pricing Model and reported that mutual funds did not appear to achieve abnormal performance when transaction costs were taken into account.

Carlsen (1970) evaluated the risk-adjusted performance and emphasized that the conclusions drawn from calculations of return depend on the time period, type of fund and the choice of benchmark. Carlsen essentially recalculated the Jensen and Shape results using annual data for 82 common stock funds over the 1948-67 periods. The results contradicted both Sharpe and Jensen measures.

Fama (1972) developed a methodology for evaluating investment performance of managed portfolios and suggested that the overall performance could be broken down into several components.

John McDonald (1974) examined the relationship between the stated fund objectives and their risks and return attributes. The study concludes that, on an average the fund managers appeared to keep their portfolios within the stated risk. Some funds in the lower risk group possessed higher risk than funds in the most risky group.

James R.F. Guy (1978) evaluated the risk-adjusted performance of UK investment trusts through the application of Sharpe and Jensen measures. The study concludes that no trust had exhibited superior performance compared to the London Stock Exchange Index.
Henriksson (1984) reported that mutual fund managers were not able to follow an investment strategy that successfully times the return on the market portfolio. Again Henriksson (1984) conclude there is strong evidence that the funds market risk exposures change in response to the market indicated. But the fund managers were not successful in timing the market.

Grinblatt and Titman (1989) concludes that some mutual funds consistently realize abnormal returns by systematically picking stocks that realize positive excess returns.

Richard A. Ippolito (1989) concluded that mutual funds on an aggregate offer superior returns. But expenses and load charges offset them. This characterizes the efficient market hypothesis.

Ariff and Johnson (1990) made an important study in Singapore and found that the performance of Singapore unit trusts spread around the market performance with approximately half of the funds performing below the market and another half performing above the market on a risk-adjusted basis.

Cole and IP (1993) investigated the performance of Australian equity trusts. The study found evidence that portfolio managers were unable to earn overall positive excess risk-adjusted returns.

Vincent A. Warther (1995) in the article entitled “aggregate mutual fund flows and security returns” concluded that aggregate security returns are highly correlated with concurrent unexpected cash flows into MFs but unrelated to concurrent expected flows. The study resulted in an unexpected flow equal to 1 percent of total stock fund assets corresponds to a 5.7 percent increase in stock price index. Fund flows are correlated with the returns of
the securities held by the funds, but not the returns of other types of securities. The study found an evidence of positive relation between flows and subsequent returns and evidence of a negative relation between returns & subsequent flows.

**Bansal’s book (1996)** “mutual fund management & working” included a descriptive study of concept of mutual funds, Management of mutual funds, accounting & disclosure standards, Mutual fund schemes etc.

**Sujit sudhakar and Amrit pal singh (1996)** of Gawahati University studied the “Investment in Equity and Mutual Funds”. The study attempted to highlight the investment decision vis. – a vis. (1) income earning (2) capital appreciation and (3) tax benefits. The largest population of the survey was mainly urban investing in corporate scrip’s and mutual funds. The period chosen was 1992-94. It is gathered that the major investors of mutual funds are salaried & self employed people. This was presumably due to tax concessions. The self employed professionally qualified practicing persons have a higher investible surplus and they could take the risk of investing in stock market. It was found that investors are very much conscious of diversification of their portfolios and they preferred combination of mutual funds and equity shares. Another noteworthy finding is that majority of the investors have become, interested in capital Market instruments only after 1985. Further 80 percent of the respondents have preferred either UTI & SBI mutual fund schemes. Other mutual funds have not proved to be hit among the investing public in that part of the country. Another important finding was that middle class investors being first generation investors tend to hold their portfolio of comparatively longer period for tax benefits and capital appreciation.
Sadhak’s book (1997) “Mutual funds in India, Marketing strategies and investment practices” is highly analytical & thought provoking. Much research has gone into writing of this book and hence highly useful to researchers. An attempt is made of the first time in presenting Marketing strategies of Mutual funds.


National Council of Applied Economic Research (NCAER) “Urban Saving survey” noticed that irrespective of occupation followed and educational level and age attained, households in each group thought saving for the future was desirable. It was found that desire to make provision for emergencies were a very important motive for saving for old age. It is found out from the survey ‘Survey of Indian Investors’ conducted by NCEAR (2000) and the regulatory authority SEBI, reported that Safety and liquidity were the primary considerations which had determined the choice of an investment asset. In this paper NCAER found out the Factors which influence individual the investment decision, is the difference in the perception of Investors in the investing process on the basis of Age and the difference in perception of the Investors on the basis of Gender.

K. Pendaraki (2001) et al. studied construction of mutual fund portfolios, developed a multi- criteria methodology and applied it to the Greek market of equity mutual funds. The methodology is based on the combination of discrete and continuous multi-criteria decision aid methods for mutual fund selection and composition. UTADIS multi-criteria decision aid method is employed in order to develop mutual fund’s performance
models. Goal programming model is employed to determine proportion of selected mutual funds in the final portfolios.

Michael K. Berkowitz and Yehuda Katouritz (2002) in their paper examined the relationship between the fees changes by mutual funds and their performance. The work distinguished between high & low quality funds and sheds some additional light on the growing controversy concerning the role of independent directors as monitors of the fee setting practices within the funds. They found that for high quality managers, there is a positive relationship between fees & performance. In contrast for lower Quality Managers, there is a negative relationship between fees and performance. The authors believed this reflects the incentive for poor managers to extract shorter benefits from investors as the likelihood of survival is lower for poor performing managers. The results were consistent with the notion that the independent directors whose responsibility is to safeguard the interest of shareholders may not be effective in doing so.

S.Narayan Rao (2003) et. al., evaluated performance of Indian mutual funds in a bear market through relative performance index, risk-return analysis, Treynor’s ratio, Sharpe’s ratio, Jensen’s measure, and Fama’s measure. The study used 269 open-ended schemes (out of total schemes of 433) for computing relative performance index. Then after excluding funds whose returns are less than risk-free returns, 58 schemes are finally used for further analysis. The results of performance measures suggest that most of mutual fund schemes in the sample of 58 were able to satisfy investor’s expectations by giving excess returns over expected returns based on both premium for systematic risk and total risk.
Bijan Roy & Saikat Sovan Deb (2003) in the article “conditional alpha & performance persistence for Indian Mutual funds Empirical evidence” investigated the Indian MF managers contribution to better performance. The research found that on an average the Indian MF managers only captures the opportunities from the available economic information, they do not contribute beyond it. The paper stresses that, the above basing on when the beta the fund is conditioned to lag economic information variables, the fund on an average becomes negative. The information variables used in the study are interest rates, dividend yields, term structure yield spread and a dummy. The authors also examined the evidence of persistence in the performance of IMF based on cross sectional regressions of future excess returns on a measure of past fund performance and used both conditional & unconditional measures of performance as measure of part fund performance. The results indicated that conditional measures of past performance predict the future fund returns significantly.

Nalini Prava Tripathy (2005) in the article entitled “An Empirical Evaluation of Market Timing Abilities of Indian fund Managers on Equity Linked Saving Scheme” analysed the market timing abilities of Indian Fund manager in form of two models, one by Treynor and Mazuy and the other by Henriksson and Merton. The results indicated that Indian fund managers are not able to time the market correctly. There is only one scheme out of 31 which exhibited the timing ability of the fund manager.

Zakri Y.Bello (2005) matched a sample of socially responsible stock mutual funds matched to randomly select conventional funds of similar net assets to investigate differences in characteristics of assets held, degree of portfolio diversification and variable effects of diversification on investment
The study found that socially responsible funds do not differ significantly from conventional funds in terms of any of these attributes. Moreover, the effect of diversification on investment performance is not different between the two groups. Both groups underperformed Domini 400 Social Index and S & P 500 during the study period.

D.N. Rao (2005) in the study “Investment styles and performance of equity MFs in India” classified 419 open ended equity MF schemes into six investment styles and analyzed the performance selected open ended equity MF schemes for the period 1 April 2005 – 31 march 2006 pertaining to the two dominant investment styles and tested the hypothesis whether the differences in performance are statistically significant. The variables chosen or analyzing financial performance are monthly compounded mean return, risk per unit return and sharp ratio. A comparison of the financial performance of 21 open ended equity dividend plans was made and found that 17 growth plans gave hyper returns than dividend plans but at a higher risk. 1 dividend plan generated higher return than growth plan & 3 growth plans & dividend plans had the same returns. It was also found that out of 21 growth plans 4 growth plans had higher co-efficient of variation (risk per unit) than corresponding dividend plans & 13 dividend plans had higher co-efficient of variation than growth plans offered by AMC. Three growth plans & dividend plans had almost equal risk per unit return. A comparison of the Sharpe’s ratio’s of growth plans & the corresponding dividend plans indicated 18 growth plans out of 21 had better risk adjusted excess returns highlighting the fat that growth plans are likely to reward the investors more for the extra risk they are assuming. Finally Pearson’s correlation co-efficient between the 2plans found to be moderate and proved equity growth
funds provide higher returns than that of equity dividend funds and differences were statistically significant.

**S. Anand and V. Murugaiah (2006)** in the paper “Analysis of Components of Investment Performance - An Empirical Study of Mutual Funds in India” examined the components and sources of investment performance in order to attribute it to specific activities of Indian fund managers. The author also attempted to identify a part of observed return which is due to the ability to pick up the best securities at given level of risk. For this purpose, Fama's methodology is adopted here. The study covered the period between April 1999 and March 2003 and evaluated the performance of mutual funds based on 113 selected schemes having exposure more than 90 percent of corpus to equity stocks of 25 fund houses. The empirical results reported here reveal the fact that the mutual funds were not able to compensate the investors for the additional risk that they have taken by investing in the mutual funds. The study concluded that the influence of market factor was more severe during negative performance of the funds while the impact selectivity skills of fund managers was more than the other factors on the fund performance in times of generating positive return by the funds. It was also observed from the study that selectivity, expected market risk and market return factors have shown closer correlation with the fund return.

**Sharad Panwar and R. Madhumathi (2006)** in the paper entitled “characteristics and performance evaluation of selected mutual funds in India” studied a sample of public sector sponsored & private sector sponsored funds of varied net assets to investigate the differences in characteristics of assets held, portfolio diversification and variable effects of
diversification on investment performance for the period may 2002 to may 2005. The paper resulted that public sector sponsored funds also not differ significantly from private sector sponsored funds in term of mean returns percent however they said there is a significant difference between public sector sponsored MFs. & private sector sponsored MFs in terms of average standard deviation, average variance and average co-efficient of variation. It is also found out that there is no statistical difference between sponsorship classes in terms of excess standard deviation adjusted returns as a performance measure. When they used residual variance (RV) as a measure of MF portfolio diversification characteristic, there was a statistical difference between public – sector sponsored mutual fund and private sector sponsored MF for the study period. The model built on testing the impact of diversification on fund performance they found a statistical difference among sponsorship classes when residual variance is used as a measure of portfolio diversification and excess standard deviation adjusted returns as a performance measure.

D.N. Rao (2006)“4 step model to evaluate performance of mutual funds in Saudi Arabia” studied 4 step model for selecting the right equity fund and illustrated the same in the context of equity mutual funds in Saudi Arabia. The study revealed that most of the funds invested in Arab stocks had been in existence for less than a year and the volatility of the GCC stock markets contributed to the relatively poor performance of these funds and the turnaround of these funds could take place only with the rallying of GCC and other Arab markets. Out of the six categories of equity mutual funds in Saudi Arabia discussed above, Funds invested in Asian and European stocks were more consistent in their performance and yielded relatively higher
returns than other categories, though funds invested in Saudi stocks yielded higher 3-year returns. Given the future outlook of Asian economies, particularly China and India and the newly emerging economies such as Brazil and Russia, funds invested in the stocks of these countries are likely to continue their current performance in near future.

Ajay Khorana, Peter Tufano and Lei Wedgein (2007) in the study named “Board structure, mergers, and shareholders wealth. A study of the mutual fund industry” studied mutual fund mergers between 1999 and 2001 to understand the role and effectiveness of fund boards. The study found some fund mergers typically across family mergers benefit target shareholders but are costly to target fund directors. Such mergers are more likely when funds underperform and their boards have a larger percentage of independent tributes, suggesting that more independent boards tolerate less under performance before initiating across family mergers. The paper indicated the effect is most pronounced when all of the funds directors are independent, not the 75 percent level of independence required by the SEC. It is also said higher paid target fund board is less likely to approve across family mergers that cause substantial reductions in their compensation.

Karoui, Aymen and Meier, Iwan (2008) in the paper “Performance and characteristics of mutual fund” studied the performance and portfolio characteristics of 828 newly launched U.S. equity mutual funds over the time period 1991-2005 using Carhart (1997) 4 factor asset pricing model. The study revealed new U.S. equity mutual funds outperformed their peers by 0.12 percent per month over the first three years. However, there were distinct patterns in this superior risk adjusted performance estimated using Carhart’s (1997) 4 factor model. The number of fund that started to
outperform older funds shrunk substantially after one to three years. These results suggested that the initially favorable performance was to some extent due to risk taking and not necessarily superior manager skill. Scrutinizing the returns further confirmed that the returns of the fund started to exhibit higher standard deviations and higher unsystematic risk that could not be explained by the risk exposure to the four factors of the Carhart model.

Paramita Mukherjee & Suchismita Bose in the paper “Does the Stock Market in India Move with Asia? A Multivariate Co-integration-Vector Auto regression Approach” if the Indian stock market moves with other markets in Asia and the United States in an era of capital market reforms and the sustained interest of foreign investors in that market. By using techniques of co-integration, vector auto regression, vector error-correction models, and Granger causality, the research indicated that, though there is definite information leadership from the U. S. market to all Asian markets, the U. S. indexes do not uniquely influence the integration of Asian markets, while Japan is found to play a unique role in the integration of Asian markets. The U. S. market is seen not only to influence, but also to be influenced by information from most of the major Asian markets. The Indian stock return in recent times is definitely led by major stock index returns in the United States, Japan, as well as other Asian markets, such as Hong Kong, South Korea, and Singapore. More important, returns on the Indian market are also seen to exert considerable influence on stock returns in major Asian markets.

Sowmya Guha, Deb & Ashok Banerjee (2009) in the article entitled “Downside risk analysis of Indian equity MFs A value at risk approach” put forward downside risk lends of Indian equity MF using a VaR measure.
Three parametric models random walk, moving average, exponentially weighted moving average and one non parametric model were employed to predict the VaR of a sample of equity MFs in India in a rolling basis and actual changes in NAV registered by the funds were compared with the estimated VaR post facto. The results indicated presence of considerable downside risk for an investor in equity MFs for the study period under consideration. The study also tested the robustness of the models using two popular back testing approaches. The statistical tests of the models based on the framework indicated that random walk model & moving average model suffered from a down ward bias and err by underestimating the VaR frequently. The EWMA and historical simulation methods are relatively free from that bias but they show a few instances of providing too conservating estimates of VaR. The researchers have put forward on case for adapting VaR based risk management systems for investment industry as a whole in India.

Soumya Guha Deb, Ashok Banerjee and B.B. Chakrabarti (2009) studied “Return Based Style Analysis (RBSA) to evaluate equity mutual funds in India” using quadratic optimization of an asset class factor model proposed by William Sharpe and analysis of the relative performance of the funds with respect to their style benchmarks. The study found that the mutual funds generated positive monthly returns on the average, during the study period of January 2000 through June 2005. The ELSS funds lagged the Growth funds or all funds taken together, with respect to returns generated. The mean returns of the growth funds or all funds were not only positive but also significant. The ELSS funds also demonstrated marginally higher volatility (standard deviation) than the Growth funds.
Dr. Kavita Chavali (2009) has done an empirical study named “Investment performance of equity – linked saving schemes”. Analysis was made to compare equity linked saving schemes with other traditional forms of tax saving schemes, analyzed equity linked saving schemes picked at random on the basis of risk & return and also made an attempt to understand level of awareness regarding mutual funds among balanced class and various factors that informed individual investors to invest in equity linked saving schemes. The analysis has been made by selecting 5 sectors and diversified portfolio composition of ELSS. The results of the study were based upon comparison of ELSS funds on the basis of return, risk (SD Beta, Alpha, Sharpe ratio) with its benchmarks S&P.CNX Nifty. The study is further extended by analyzing the questionnaire filled in by the investors. The study proved that it is not just the past performance of returns, but qualitative criteria like reputation and performance of fund house, credential and expertise of fund manager and other funds managed by him affects the performance of ELSS. It also proved that ELSS can be considered for investment because of dual advantage of tax savings and high returns but the right choice has to be made by the investor which matches the risk appetite.

Dr. Hitesh S. Viramgami (2009) in his article “Resource mobilization by Indian mutual fund industry” has made an attempt to analyze total resource mobilization by the mutual funds industry for eight year period (2001-2007). The study entitled “Resource mobilization by Indian Mutual Fund Industry” shows that 70 percent of the resources mobilized are from liquid / MM Schemes, growth schemes, ELSS and income funds offered by private sector mutual funds share of public sector has decreased to 8.81 percent over the study period. The author said for
orderly growth of resource mobilization of mutual funds the investor’s protection should be of prime importance and should not be prejudiced after investments made by them.

Suppa-Aim and Teerapan (2010) in the thesis “Mutual fund performance in emerging markets the case of Thailand” specifically investigates mutual funds in one of the emerging economies, Thailand, using a more extensive dataset than previous studies; it controls for investment policy and tax-purpose differences, as unique characteristics of mutual funds in Thailand. The authors scrutinized how fund managers perform and what strategy they use in managing their portfolios; and ask whether any fund characteristics can explain fund performance. The study also explored the impact of liquidity on performance and performance measures. In this context the result indicated that mutual fund managers, as a whole, do not have selectivity or timing ability and they do not give value added to investors. Most of the fund managers in Thailand invest heavily in small and growth stocks. Flexible fund managers are, in comparison, more active and adjust their portfolios dynamically according to economic information. There is persistence in performance in general mutual funds. This evidence is statistically and economically significant although it derives mainly from poorly performing funds which continue to perform badly. Size, age and fund family also have explanatory power in fund performance but it is specific to investment policy and the evidence is not economically significant. Net cash flows, in general, have no impact on fund performance. However, the significant amount of cash inflows can severely lower performance in mutual fund since the fund managers are unable to allocate their portfolio immediately and leave large amounts in their cash position.
Liquidity also plays a major role in mutual fund performance. The study also found that funds which contain more illiquid assets in their portfolios perform better and this suggests that there is a liquidity premium in mutual funds. As a result, a liquidity-augmented model which includes one liquidity factor is proposed. Results from this proposed model show that our liquidity factor, as measured by stock turnover ratio, has explanatory power for fund performance, in particular in low liquidity portfolios. However, our liquidity factor is unable completely to explain the liquidity premium in mutual funds because the evidence of a liquidity premium is still present. Finally, the study reveals the policy implications of introducing the tax-benefit funds scheme in Thailand. The study found that the tax-benefit funds perform significantly better than general funds and this is also true even when controlled for other fund characteristics. The tax-benefit fund managers are more passive than managers of general funds but they do not employ any different strategy from that used by managers of general funds. Tax-benefit funds are more sensitive to cash flows and contain slightly more illiquid stocks in their underlying assets. Thus, the superior performance in tax-benefit funds is not only attributable to the liquidity premium, but also to the fund managers’ superior ability, as well as to the long-term restrictions which help tax-benefit fund managers to reduce nondiscretionary trading cost in these funds.

**Dr. Susheel Kumar Mehta (2010)** in the article named “SBI vs. UTI – a comparison of performance of mutual funds schemes”. has taken 10 UTI and 10 SBI mutual funds and analyzed their performance. The study concluded that preference of UTI & SBI mutual funds has been better in 2007 – 08. When compared to 2006-07 SBI performance was & good in
both the years. No consistency for both the companies’ mutual funds in terms of returns. Consistency is observed for risk. UTI money market mutual funds dividend & SBI magnum income plus fund- saving plan growth are found to be least risky among selected schemes of UTI & SBI. UTI were more defensive than SBI schemes. SBI magnum comma fund – dividend had been the most aggressive scheme & UTI money market mutual funds daily dividend has been the most differential scheme. Aggressiveness was the right strategy. SBI’s magnum comma fund dividend has preference very well during both the years. During 2006-07 all the selected schemes gave dismal performance which gave same preference. As of market based on risk adjusted measures of Sharpe, Treynor & Jensen. During 2007-08 only one of the selected UTI schemes master value fund growth option preformed better followed by MEF – G. & MBF – G performed better than market. Whereas SBI – MCF dividend follow by MEF – G & MBF-G – preformed better than Market. As superior stock selection is concerned none of the portfolio Manager selected UTI & SBI showed skills during 2006-07. It was only 2007-08 managers of SBI MCF – D- eructed some superior stock selection skills.

Dr.V.Rama Devi and Nooney Serien Kumar(2010) in the paper entitled “Performance evaluation A comparative study between Indian & Foreign equity Mutual funds” studied the performance of Indian & Foreign equity Mutual funds, evaluated the performance of diff equity mutual funds on basis of risk – return parameters and also evaluated the performance of Indian & Foreign equity Mutual funds on risk adjusted measures suggested by Sharpe, Treynor & Jensen. The researchers has selected of Indian & Foreign equity funds and classified into the following categories. Indian
equity diversified funds-Index funds, Tax saving funds and Technology funds. Foreign equity diversified funds-Foreign equity Index, Tax saving and Technology funds. The research has taken 40 IEDFS, 18 IEIFS, 16 IETSF and 5 IETFS. They concluded that the Foreign Equity Funds significantly differ from one another with in the respective foreign Investment style. Even Indian equity mutual funds significantly differ from one another with in the respective Investment style. The paper also indicated that the tremendous success of the mutual funds industry is due to the fact that it has done more than any other financial industry to offer solid products tailored to meet real financial needs and marketed those products responsibly and it cannot be ignored that rapid changes and Market pressures are challenging. The authors stressed that it cannot be remained pigeonholed by outdated thinking or anticipated business practices the mutual fund industry has to maintain long term health and investor protection has to be maintained for its future success.

Lakshmi N (2010) in the research paper entitled “performance of the Indian MF industry a study with special reference to growth schemes” found out that MF serve those individuals including to invest but lack the technical investment expertise. Funds mobilized by the industry had grown by 57 percent and AUM by 14 percent during 1997-2006. Analysis of performance of seven schemes should that, all the sample schemes outperformed the market in terms of absolute returns without adequate returns to over total risk. All the three risk performance measures showed underperformance of sample schemes. Investors and fund Managers agreed that investing in MF were less risky. Goodwill was the main criterion of choosing
MF organizations. Investors were moderately satisfied with the performance & services offered by the industry.

Ms. Nidhi Walia, Dr (Ms) Ravi Kiran (2010) in the paper “Efficient Market Hypothesis, Price Volatility, and Performance of Mutual Funds” studied about mutual fund organizations to identify if mutual fund managers can outperform by estimating market movements. The purpose of this study was to determine whether the variables such as demographic characteristics (age, gender) and investment patterns could be used individually or in combination to both differentiate among levels of men and women investment decisions and risk tolerance and develop some guidelines to the investment managers to design their investment schemes by considering these views of individuals.

The study states that Mutual fund organizations have responsibility towards investors to provide them optimal returns using their abilities to efficiently tap market timings along-with desired diversification. Mutual fund portfolio management is a real dynamic decision process whereby continuous evaluation and monitoring is demanded from efficient fund managers. Ever improved technologies and deregulation have significantly contributed towards improving the operational efficiency of mutual fund managers yet the investors risk perception gap is widening. Results of the study support Efficient Market Hypothesis (EMH) and conclude that Mutual fund managers cannot identify similar patterns in market movements and stock market follows Random Walk. It can be concluded that the modern investor is a mature and adequately groomed person. In spite of the phenomenal growth in the security market and quality Initial Public Offerings (IPOs) in the market, the individual investors prefer investments
according to their risk preference. For e.g. Risk averse peoples chooses life insurance policies, fixed deposits with banks and post office, PPF and NSC. Occasions of blind investments are scarce, as a majority of investors are found to be using some source and reference groups for taking decisions. Though they are in the trap of some kind of cognitive illusions such as overconfidence and narrow framing, they consider multiple factors and seek diversified information before executing some kind of investment transaction.

Sanjay Kumar Mishra and Manoj Kumar (2011) “How mutual fund investors objective and subjective knowledge impacts their information search and processing behaviour” in the article attempted to prove how Contrary to the popular belief that objective knowledge (OK) (that is, what is actually stored in the memory) and subjective knowledge (SK) (that is, what individuals perceive they know) differently impact information search and information-processing behavior, with an empirical study conducted on 268 mutual funds (MF). Investors suggest no significant difference in the impact of OK and SK on the width and depth of information search and information processing. The study suggested that OK and SK significantly positively impact the width and depth of information search and information-processing behaviour, however, no significant difference exists in the way they impact. The possible explanation put forward is that even though MF investors may suffer from self-deception (that is, pseudo expertise) and report high knowledge (that is, high SK), the impact of SK on actual investment behaviour is not significantly different from that of OK.

Sathya Swaroop Debasish in the paper “Investigating Performance of Equity-based Mutual Fund Schemes in Indian Scenario” mutual funds
said the performance of the mutual fund products become more complex in context of accommodating both return and risk measurements while giving due importance to investment objectives. The paper attempted to study the performance of selected schemes of mutual funds based on risk-return relationship models and measures. A total of 23 schemes offered by six private sector mutual funds and three public sector mutual funds have been studied over the time period April 1996 to March 2009 (13 years). The analysis has been made on the basis of mean return, beta risk, and coefficient of determination, Sharpe ratio, Treynor ratio and Jensen Alpha. The overall analysis finds Franklin Templeton and UTI being the best performers and BSL, HDFC and LIC mutual funds showing poor below-average performance when measured against the risk-return relationship models.

Deepak Agrawal (2011) in the study “Measuring Performance of Indian Mutual Funds” touched the development of Indian capital market and deregulations of the economy in 1992. Since the development of the Indian Capital Market and deregulations of the economy in 1992 there have been structural changes in both primary and secondary markets. Mutual funds are key contributors to the globalization of financial markets and one of the main sources of capital flows to emerging economies. Despite their importance in emerging markets, little is known about their investment allocation and strategies. This article provided an overview of mutual fund activity in emerging markets. It described about their size and asset allocation. The paper is a process to analyze the Indian Mutual Fund Industry pricing mechanism with empirical studies on its valuation. The data is also analyzed at both the fund-manager and fund-investor levels. The study revealed that the performance is affected by the saving and investment
habits of the people and the second side the confidence and loyalty of the fund Manager and rewards affects the performance of the MF industry in India.

Zhi Da, Pengjie Gao, and Ravi Jagannathan (2011) in the article “Impatient Trading, Liquidity Provision, and Stock Selection by Mutual Funds” showed that a mutual fund's stock selection skill can be decomposed into additional components that include liquidity-absorbing impatient trading and liquidity provision. The study proved that past performance predicts future performance better among funds trading in stocks affected more by information events. Past winners earn a risk-adjusted after-fee excess return of 35 basis points per month in the future. Most of that superior performance comes from impatient trading. The paper also states that impatient trading is more important for growth-oriented funds, and liquidity provision is more important for younger income funds.

2.2 Need for the study

Mutual Fund is one of the most preferred investment alternatives for the small investors as it offers an opportunity to invest in a diversified and professionally managed portfolio at a relatively low cost. A Mutual Fund is a trust that pools the savings of a number of investors who share a common financial goal. Over the past decade, mutual funds have increasingly become the investor’s vehicle of choice for long-term investing. In recent times, the emerging trend in the mutual fund industry is the aggressive expansion of the foreign owned mutual fund companies and the decline of the companies floated by nationalized banks and small private sector players. Growth and developments of various mutual funds products in the Indian capital market has proved to be one of the most catalytic instruments in generating
momentous investment growth in the capital market. In this context, close monitoring and evaluation of mutual funds has become essential. With emphasis on increase in domestic savings and improvement in deployment of investment through markets, the need and scope for mutual fund operation has increased tremendously. Thus, the involvement of mutual funds in the transformation of Indian economy has made it urgent to view their services not only as a financial intermediary but also as a pace-setter as they are playing a significant role in spreading equity culture. In this context, it becomes pertinent to study the performance of the Indian mutual fund industry. The relation between risk-return determines the performance of a mutual fund scheme. As risk is commensurate with return, therefore, providing maximum return on the investment made within the acceptable associated risk level helps in demarcating the better performers from the laggards.

2.3 Objectives of the study

There are several parties to mutual fund such as sponsor, the trustees, the AMCs, the custodians and investors as beneficiaries. To gain an overview of the current performance trends of the Indian mutual fund industry and investors’ preference, the present thesis is intended to evaluate the performance of mutual funds and its impact of diversification of portfolio on risk and risk potential of mutual funds, in particular. It is felt necessary to understand the preferences of mutual funds with respect to the risk tolerance, return expectation, tenure of investment and investment influencing factors etc. in relation to age, qualification, gender, marital status, occupation and income levels. The objectives of the study are:

1. To present the trends in the growth of Indian mutual funds.
2. To appraise the performance of selected schemes on the basis of performance measures like Sharpe ratio, Jensen and Treynor measures to find out the risk adjusted returns.

3. To evaluate the performance of the select equity growth schemes and compare it with the benchmark to find out whether there is equality of means (returns).

4. To compare the risk and return of equity and debt funds for a period of 10 years to study the long run performance.

5. To find the relationship of age, qualification, gender, marital status, occupation and income with the preferences of mutual funds.

6. To know whether there is any association between the selected variables and investors perception of mutual funds.

7. To suggest suitable measures for strengthening of the mutual funds in India.

2.4 Research Methodology

For the collection of data regarding the conceptual framework, performance of the mutual funds and the preference of mutual fund investors, the data has been collected through Primary and Secondary Sources as follows:

2.4.1 Primary Data

For studying the preference of mutual funds, primary data has been collected with the help of the questionnaire. Information has been gathered from investors visiting the local registrars and AMC branches of mutual funds in Visakhapatnam. The sample is a convenience sample and constitutes 300 respondents. People from different groups are included in the sample and categorized into male and female, different age groups, different
occupations viz., public sector, private sector, government, businessmen, self employed, students, homemakers and other professionals with different income levels. The sample size of 300 is considered because of the primary data is collected through direct interaction with the investors in the offices of registrars such as CAMS,KARVY, WAY TO WEALTH and AMC BRANCHES viz., RELIANCE, UTI, LIC, FRANKLIN TEMPLETON, HDFC, etc. The questionnaire is aimed to understand the investors’ preferences of mutual funds and its relationship with the socio-economic profile of the respondents.

2.4.2 Secondary data

The study has included scheme wise performance appraisal of various mutual funds. Data pertaining to the performance of the funds were drawn from secondary sources through data published by AMFI, mutualfundsindia.com,moneycontrol.com and BSE.com, valueresearch.com, ici.org, mutual funds books, journals and websites of other mutual funds.

2.4.3 Hypothesis testing

The primary and secondary data are analysed for the following:

- Chapter IV part 1 hypothesis - “High risk gives high returns” for selected schemes.
- Chapter IV part 2 hypothesis – “Mutual funds and BSE SENSEX offers equal means”, ‘Students t test is used for equality of means’.
- Chapter IV part 3 – comparative analysis of 10 select equity and debt schemes for a period of 10 years (2002-2012).
- Hypothesis for chapter V (primary data analysis) – “The demographic variables of the respondents such as age, qualification, gender, occupation and income have relationship/association with the preferences of mutual funds”.
2.4.4 Scope of the study

In India mutual fund industry is growing at a rapid speed after liberalization of policy of the government. There are totally 46 mutual fund houses in India out of which 38 are private sector AMCs and the remaining are public sector and UTI AMCs. The private sector mutual funds are Indian, Foreign, Joint venture predominantly Indian and Joint venture predominantly Foreign. Hence, the public sector sponsored mutual funds along with UTI is facing severe competition. Banking companies and Insurance companies also entered into mutual funds industry which is another reason for severity of competition. As the private sector mutual funds are offering a wide array of schemes with different structures and objectives, the risk and returns vary. There is a wide scope to evaluate the performance of mutual funds in various dimensions like risk-return, risk adjusted return and return from alternative investments.

2.4.5 Period of the study

The study covers analysis of various schemes for 3 years (2009-12) data in chapter IV part 1; 5 years (2007-12) data in Chapter IV part 2; 10 years (2002-12) data in Chapter IV part 3.

2.4.6 Data Analysis Techniques

1. The data analysis is mainly done through the three important measures of mutual funds. 1. Sharpe, 2. Treynor and 3. Jensen Measures.
2. Various Statistical formulae like Standard deviation, beta and R-squared to find the risk associated with the schemes.
3. Analysis of percent changes in Gross Mobilization of Mutual funds.
4. Analysis of trends through percent changes for AUM.
5. A statistical formula like t test is used to test the significance of means of mutual funds Vs BSE SENSEX.
6. ‘One way Anova’ and ‘chi square test’ are used to find the relationship/association between the socio-demographic variables and the preferences of mutual funds.

7. Relative Performance Index (RPI) formula is used to compare fund Sharpe ratio with BSE SENSEX.

➢ **Risk free rate of return**

The average Return offered by 90 days Treasury bill of the Government of India during 2007-2012 is considered as the proxy risk free return which is computed to be 5.75 Per Annum.

➢ **Sharpe Measure**

The most common measure that combines both risk and reward into a single indicator is the Sharpe Ratio. A Sharpe Ratio is computed by dividing a fund’s return in excess of a risk-free return (usually a 90-day Treasury bill or SBI fixed deposit rate) by its standard deviation.

\[
\text{Sharpe ratio} = \frac{(R_i - R_f)}{S_i}
\]

Where, \(S_i\) is standard deviation of the fund

\(R_i\) is return on investment, \(R_f\) is risk free rate of interest.

➢ **Treynor measure**

The Treynor ratio is similar to the Sharpe ratio. Instead of comparing the fund’s risk adjusted performance to the risk free return, it compares the fund’s risk adjusted performance of the relative index.

\[
\text{Treynor’s index} (T_i) = \frac{(R_i - R_f)}{B_i}
\]

Where

\(R_i\) represents return on fund, \(R_f\) is risk free rate of return and \(B_i\) is beta of the fund.
Jensen’s measure

This represents the difference between the Expected performance from a fund, given its Beta, and the actual returns it generates.

\[
Jensen's\ measure = fund\ return - [Risk\ free\ rate + Beta\ of\ fund\ (Benchmark\ return - Risk\ free\ return)]
\]

Compounded Annual Growth Rate

It helps in comparing two different returns from investments and in calculating how much an investment has returned per year on compounded basis.

\[
CAGR = ((End\ Value/Start\ Value)^ (1/(Periods - 1))) - 1
\]

Mutual funds Returns

Returns are calculated through the following formula

\[
\text{Mutual\ funds\ Returns} = \frac{(CURRENT\ NAV - PREVIOUS\ NAV)}{PREVIOUS\ NAV} * 100
\]

BSE SENSEX returns

Returns analysis for BSE SENSEX is calculated through:

\[
\text{BSE type\ sensex\ return} = \frac{closing\ valve - Opening\ value}{Opening\ value} * 100
\]

Standard deviation

Standard deviation provides investors with a mathematical basis for their investment decisions. Standard deviation is a measure of variability or diversity that shows how much variation there is from the mean. The standard deviation of a data set is the square root of its variance.

\[
S = \sqrt{\frac{\sum_{i=1}^{N}(x_i - \bar{x})^2}{N}}
\]
➢ Beta

Beta measures the systematic risk and shows how prices of funds respond to the market forces. Beta is used in the Capital Asset Pricing Model (CAPM), a model that calculates the expected return of an asset based on its beta and expected market returns. Systematic risk is measured in terms of beta which indicates the sensitivity of a scheme's return in relation to market return. If a scheme's beta is < 1, it is considered to be defensive and if it is > 1, considered as aggressive.

The Formula for Beta is:

\[ \text{beta} = \frac{cov(r, k_m)}{\text{stddev}(k_m)^2} \]

- \( r \) = return on the fund examining, \( k_m \) = return on the index choosing as a proxy for the stock market

➢ R-Squared

Beta is dependent on correlation of a mutual fund scheme to its benchmark index. So, while considering the beta of any fund, an investor also needs to consider another statistic concept called ‘R-squared’ that measures the correlation between beta and its benchmark index. The beta of a fund has to be seen in conjunction with the R-squared for better understanding the risk of the fund.

➢ Student’s t test

The t-test is often used to calculate the significance of observed differences between the means of two samples. The t-test is generally used with scalar variables, such as length and width, and so on. The null hypothesis is that there is no significant difference between the means.

T test formula =

\[ t = \frac{|x_1 - x_2|}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}} \]
➢ **Relative Performance Index**

The RPI is used to calculate the funds return in comparison with the BSE SENSEX return.

\[
RPI = \frac{\text{average return on the fund}}{\text{average return on BSE}}
\]

➢ **One Way Anova**

A One-Way Analysis of Variance is a way to test the equality of three or more means at one time by using variances. F statistic is found by dividing the between the group variance divided by within group variance. Where n is the degrees of freedom.

\[
F = \frac{s_1^2}{s_2^2}
\]

Where 

\[
s_1^2 = \frac{\sum (x_1 - \bar{x}_1)^2}{n_1 - 1}
\]

\[
s_2^2 = \frac{\sum (x_2 - \bar{x}_2)^2}{n_2 - 1}
\]

**Chi square**

Chi-square test of association is equivalent to the Chi-square test of independence and the Chi-square test of homogeneity. The Chi-square test of association is used to determine whether there is an association between two or more categorical variables.

\[
\chi^2 = \sum \frac{(O - E)^2}{E}
\]

Where O is observed frequency and E is Expected frequency.

**2.4.7 Limitations**

1. The secondary data is collected from various websites, journals and books. There could appear some variations from the original data. The
information for some schemes was not available for longer periods and hence not included in the study.

2. Selected schemes have been taken into consideration.

3. There is no uniformity in inception of schemes; hence all the schemes are not included in chapter IV part 2 and part 3.

4. The primary data is collected from Visakhapatnam investors who visited the registrars and AMC branches which may not represent whole population. Any study having a bearing on attitude, incomplete, wrong information and non response to some questions couldn’t be avoided; however utmost care is taken so as to minimize such errors.

2.4.8 Presentation of the Study

Chapter – I Introduction

- Introduction
- Concept
- Origin and growth

Chapter – II Review of Literature and Research Methodology

- Review of literature
- Research Methodology

Chapter – III Regulations of Mutual Funds

- SEBI Regulations
- AMFI Regulations

Chapter – IV Performance Evaluation of Mutual Funds

- Performance appraisal of selected schemes
- Performance evaluation of equity growth schemes
- Comparison of equity and debt schemes

Chapter – V Preferences of Mutual Fund Investors in Visakhapatnam

- Primary data Analysis

Chapter – VI Summary, Findings and Suggestions

Bibliography