6.1 Findings

As stated initially, there are mixed results concerning whether certain mutual fund attributes affect mutual fund performance. This study examined various mutual fund attributes and how they affected mutual fund performance that has been adjusted for their varying categories and investment objectives. This study added to the literature by presenting new evidence on the attribute/performance relationship using recent data and larger samples. The new results presented in this study address the contradictory conclusions in the previous literature, where five of the eight mutual fund attributes affected mutual fund performance. However, the overall fit of the model is lacking, as suggested by the relatively moderate $R^2$ and Adjusted $R^2$. However, the F-test illustrates that the seven of the eight mutual fund attributes, on a combined scale, are statistically significant at 1%. These findings are consistent with those who have found that mutual fund attributes affect performance, but the degree of influence over performance is extremely limited by other mitigating factors, which are outside the scope of this study.

This study has taken the recommendations of past researchers, found the commonalities, and examined the most salient variables to provide practical guidelines for
the lay investor and to add to the literature by providing a deeper understanding of the mutual fund attribute/performance relationship. The findings in this study are as follows:

A mutual fund’s calculated Sharpe Ratio (SR) does affect total mutual fund performance in all ten years examined. As the Sharpe Ratio is a measure of risk-versus reward, it stands to reason that the higher the Sharpe Ratio, the higher total performance (when factoring in risk) and vice-versa. However, the significance of the impact of Sharpe Ratio on the performance of the mutual fund is inconsistent. This would suggest that while there is evidence of a linear relationship, the linkage is too unpredictable and marginal in strength to be used as a reliable sole factor in making sound investment decisions.

The impact of the Alpha of the fund have a statistically significant effect on total mutual fund performance. The Alpha is the measure of the fund manager’s ability to influence the performance of the fund. This suggest that the stock picking and market timing abilities of the fund managers have some impact on the performance. However, the direction of its impact is not consistent in all ten years examined. This suggests that the efforts and decisions of the fund management team do not always result in superior performance for the investors.

The impact of the Beta of the fund is also statistically significant on performance of the mutual fund. The beta is the measure of systematic risk. This suggests that the mutual funds investing in high beta stocks compensate their investors with higher returns. Similarly, the impact of the Standard Deviation of the fund is also statistically significant on performance of the mutual fund. The standard deviation is the measure of volatility in returns. However, the direction of its impact is not consistent in all ten years examined. This suggests that risk and volatility do have a linear relationship but the linkage is too unpredictable.
The results show that the impact of expense ratio is not statistically significant on performance of the mutual fund. The expense ratio is the measure of fund management expenses and research expenses charged by the Asset Management Company to the respective schemes. Statistical insignificant influence of expense ratio on the performance suggest that the funds charging and incurring higher expense do not reward the investors proportionately. Thus, expense ratio can be ignored by the investors while selecting the mutual fund for investments.

The mutual fund size does not have a statistically significant impact on the performance of the fund. Size is one of the most researched variable in this domain. The past researches are inconsistent on this relationship. Size is measured by the total Asset Under Management for a fund. Indro et al. (1999) have concluded that as mutual fund size increases, its performance decreases, because as mutual funds become larger, it is very difficult to move into or out of various positions quickly and seamlessly; because of this, performance suffers.

The impact of PE ratio of the fund is statistically significant on performance of the mutual fund. The PE ratio is a valuation measure of the portfolio and ratio indicated the presence of growth stocks in the portfolio. A high PE ratio suggests dominated presence of growth oriented stocks. However, in this case as well, the direction of the impact is not consistent over the ten years of study. This suggest that growth strategy does not always reward the investors across the market cycles.

A mutual fund’s Top 3 Holding Percentage does affect total mutual fund performance in all ten years examined. Total percentage of mutual fund holdings is a widely available attribute available to individual investors, but seldom used in making investment decisions. Investors may wish to consider this attribute when examining the diversity of
their investments if the number is relatively small and conversely, investors may wish to examine fees and expenses (associated with the cost of trading) if the total number of holding is high along with a high turnover ratio. Based on the extremely low coefficients of this attribute, this attribute has little bearing on the overall equation and should not be used solely as a predictor of future mutual fund performance.

One must understand that although the above attributes show strong evidence of affecting mutual fund performance, the combined effects of all of the independent variables is greater than zero (using the F-test). This means that these variables are worthwhile tools in explaining mutual fund performance.

One must also understand that these variables are not the only variables that affect performance. With the evidence of relatively moderate R2 and Adjusted R2 in all ten years, this suggests that there are other variables that can aid in explaining how mutual fund performance behaves. Therefore, the investor must understand that these independent variables in this study (to some degree) aid in the explanation of mutual fund performance but only explain a small portion of mutual fund performance, and there must be a general understanding that there are other overwhelming economic or human behavioral factors that influence mutual fund performance.

The influence of the following attributes on mutual fund performance is found to be statistically insignificant for the period under study.

- Expense Ratio
- Asset Under Management
- Top 3 holding percentage
The influence of the following attributes on mutual fund performance is found to be statistically significant for the period under study.

- Sharpe Ratio
- Jensen Alpha
- Beta
- Standard Deviation
- Price-Earnings Ratio

6.2 Contribution of Research

The investors can use the findings of the research while selecting a mutual fund scheme. Further, findings of this study also provide a framework to the investor to review his mutual fund portfolio at regular intervals by studying the effect of change in the fund attributes. The Asset Management Companies (AMCs) and fund managers can use these attributes as check points for self-evaluation and there by implement a better control and performance of mutual funds. The study provides a strong base for researching performance of mutual funds for future researchers. The future research can be carried out as extension of this research work for other types of mutual fund schemes and also for a cross country mutual fund attributes as a comparison.

6.3 Recommendations for Investors

Mutual funds are vehicles through which investors can invest in equity shares and debt instruments. When the investor chooses mutual fund route to invest in equity he faces a wide choice of types of schemes with different options. Investor must be clear about the
investment goals, expected returns and the desired allocation into equities and debts. After deciding on the equity portion, the investor has a choice between actively managed funds and passively managed funds. Selecting a mutual fund for investment is a filtering process that involves eliminating funds based on the various characteristics that influence the performance of the fund. Today, these data of fund attributes and performance is available on many online platforms like Value Research, Morning Star, and Money Control etc. Let us assuming at this stage that the investor opts to invest in actively managed funds, now he can look at the broad classification of the mutual fund schemes that is based on the type of companies (scripts) they invest in, viz. Large Cap, Mid-Cap, Small Cap and Multi-Cap funds. There are several ways in which the categories of funds can be mixed to form an ideal portfolio.

After choosing an appropriate category of fund for investment, the investor must look at the long term past return of the funds. As per the findings of this study, higher the past return, higher are the chances that the fund may continue to perform in future. This finding is contradicting to the disclaimer that the mutual fund companies state in all modes of promotions and advertising that the past performance is not a guarantee for future performance. Investors can filter out the funds that have under-performed in past and retain the funds that have performed relative better in that category in the longer past, say past 5-year or 7-year return. Here, the past return over the shorter period should be ignored. For example, a fund that has performed well in the past six months or even past one year should not be preferred over the funds that have longer history of good performance. Thus, investor may assign some weight to 3-year return and high weight to 5-year and/or 7-year return.

In this process, investor may come across the popular fund rankings and ratings by several online platforms. When funds are selected on longer term past returns, not necessarily the highest rated funds will only be selected. The investor may ignore the
ranking and ratings if he is willing to develop as a Do-it-Yourself (DIY) investor. Also, the investors must look at Sharpe Ratio of the shortlisted funds. Sharpe ratio measures the risk adjusted past return of the fund. Thus, higher this ratio better is the fund.

Now the investor can look at the risk matrices viz. beta and standard deviation (SD). Beta, the systematic risk measure and SD, the return volatility of the fund have a positive and statistically significant impact on the performance of a fund. Thus, a risk averse investor should select funds with lower beta and lower SD. Along with this, the alpha that measures the fund’s outperforming its benchmark index is also an important factor. A positive and higher alpha indicates that the skills and decisions of the fund management has paid positive dividends. Though statistical results of this study are not consistent but this is a differentiating factor for the actively managed funds. Investor can further eliminate the funds with lower (or negative) alpha.

Further, the investor must also look at the portfolio characteristics of the funds under consideration. Concentration of the portfolio is an important attribute to be considered. The results of this study suggest a negative impact of the portfolio concentration on performance. Here, concentration is referred as the percentage of portfolio in top 3 scripts. Thus, investor must select a fund with well-diversified portfolio over a fund with highly concentrated portfolio. This reinforces the belief of old school of thought that putting all eggs in one basket is not advisable. A high PE ratio means dominance of value driven stocks in the portfolio of the fund. If the investor believes in value investing strategy may invest in fund with higher PE ratio.
6.4 Recommendations for Future Research

This study examined such a small portion of the mutual fund world where the findings presented have raised more questions and avenues for further research. This study has examined the role of four independent variables and their effects on mutual fund performance and has only partly explained a small fraction of this phenomenon. Therefore, to aid in understanding how mutual fund performance behaves, this study presents the following recommendations for further research:

- Examine the persistence of the attributes on mutual fund performance. Here, it will be interesting to know how long some funds can outperform the peers and their benchmark index.
- Examine variables that affect mutual fund performance beyond mutual fund attributes. Here, turnover ratio, active share etc. can be included for further research.
- Include more obscure mutual fund attributes that may not be available to the public. Here, variables like Sortino ratio that measures downside risk, Ulcer index, again, a measure of downside risk etc. can be included for future research.
- Include other types of mutual funds to aid investors in selecting different types of mutual funds. Categories like balanced funds, income (debt) funds etc. can be included for future research.

6.5 Conclusion

This study has introduced the problem investors have in selecting mutual funds, where the sheer amount of information on mutual funds results in investor confusion. To dispel this confusion and to bring a deeper understanding of mutual fund performance,
researchers have examined the variables that affect mutual fund performance. The results were mixed, but the recommendations from past researchers were similar in that they wanted future research to include larger samples over a longer time period and to provide practical guidelines for the investor. This study followed suit by compiling data from 2003 to 2012 and has concluded that six of the eight mutual fund attributes affect mutual fund performance. Out of these six, four have consistent impact on the performance. This is not to state unequivocally that mutual fund attributes solely affect mutual fund performance. In fact, additional findings in this study illustrate that other variables outside of these four mutual fund attributes can aid in explaining mutual fund performance as evidenced with relatively moderate $R^2$ and Adjusted $R^2$. What these other variables could possibly be and how they may affect performance are just a couple of questions this study leaves to future researchers.