CHAPTER 1

INTRODUCTION

1.1 Background of the Study

A mutual fund is a shared investment arrangement of funds, which investing the money in different securities such as bonds funds, stocks funds, income funds, money market funds, Islamic funds, balance funds and so many other similar assets. The mangers operating mutual funds on behalf of investors, who invested their saving and expecting the capital gains and returns from their funds capital investments. There are various types of mutual funds traded in Pakistan i.e. Open ended mutual funds, closed ended mutual funds, Conventional/Shariah Compliant Funds and voluntary pension funds. Open ended mutual funds can be seen and are traded on MUFAP at their Net Asset Value (NAV) based on daily based. These funds constantly generate new units and these are also called unit trust. The funds holders cash and buy these units on a daily basis at the market NAV, as these funds are traded on their NAV, so they can be buy and purchased to the Mutual funds management companies on their daily price rates.

These are the funds which are traded on Pakistan Stock Exchange at their respective share price rate, their share prices are traded on stock exchange just like other Public Ltd Co. Their share prices market rates are offer on stock exchange at daily basis and the investors can sold and bought their shares on stock exchange. Like

others companies these funds have a fixed numbers of shares and through an IPO offer they are floated on the stock exchange. SECP has characterized the different schemes of mutual funds as an equity funds which are those funds which normally invests by the mutual funds companies in stocks also called equities. They prime purpose of these funds are as well know that is returns and revenue but this can be used as long term investment plan for capital gain in the industry. Asset Allocation Fund funds and assets can easily be diversify by investing in so many different types of securities and instruments types available in the market. Index Tracker Scheme funds are invest by the mutual funds managers in securities that are traded and can be seen on the large screen of PSE like KSE 100 index and KSE 30 index.

These funds depend on the performance of these indexes and can be tracks on the basis of their trading values and share prices. Shariah Compliant (Islamic) Scheme are in Islamic nature of funds which are investing in Shariah Compliant securities like Sukuk, Ijara sukuks and shares etc. these funds are same in their nature like other conventional mutual funds. Balanced Scheme are very different type of investment pool which are invested both in stock and debt instruments, thus the investors are willing and expecting to gain a balance level of growth by investing in stocks and debt instrument revenues. Fund of Funds schemes are those funds type, which are invested in many other mutual funds available in the markets to the managers controlling these funds. These can be operated both in open and closed ended mutual funds. Money Market Scheme funds are the most harmless and table in their nature among the all mutual funds types, normally the mangers invest these funds in debt instruments available in the market such as the T Bills and other safe bank deposits. Capital Protected Schem in such funds' investments the original capital investment are guaranteed with some additional returns and gain but that can only be provided at

the end of the investment contact agreement in which the period and cycle of investment is already specified in advance.

Income Scheme funds are mostly invest in such fixed incomes schemes which are constant and confirmed for them. They can be invest in both long term and short term debt instruments such as T-bills, TFCs, and other government securities available in the market for investment companies. Aggressive fixed income scheme as its name shows these are a sort of aggressive type of funds investment schemes in which normally the fund managers expect abnormal and exceptional returns by investing greater amount of fixed income with their companies. They can also be invested in the different low rank qualities of asset as well. Commodity scheme in such type mutual funds investment can provide an opportunity to the small and low level investors to take ultimate advantages of the gain in commodities which can be gold and other commodities through mutual fund investments. A high percentage of their assets are invested in the commodities and future agreements which can be in the form of cash and can be in the commodities deliverables as well.

Voluntary Pension Schemes (VPS) is an important well- organized and systematic fund plan for those people who want to save their investment to get the benefit of their saving and investments after their retirement from jobs and services. This is a tax free investment plan and the investors in such funds are trying to manage their funds in such assets allocation plans which are in their risk tolerance reach level and earning expectations. In such plans the funds are collected to make a pool of those funds which is retained by investors that is control and managed by a valid approved licensed Pension Fund Manager by SECP.

These are the different types of investment opportunities available for investors and mangers where they can set and target their investments according their

need, financial strength, capabilities and also to up to which level they can bear and beat the risk for their future investment. Such as those who want to get and earns some abnormal returns they have to be ready for abnormal risk as well and similarly those investors who want to get higher returns in their investments for a longer period of time they can invest in equity mutual funds, whereas those who want to get normal and lower returns from their investment for shorter period of time they can invest in money market instruments available.

Mutual fund has very long history, having its traces from Netherlands in 1774, followed by North America in 1924 and soon became the vital pool of investments around the world. The first Mutual Fund in Pakistan was introduced in 1962 by Investment Corporation of Pakistan and soon it got momentum as an attractive industry. This growth in the industry is a sign of investors' trust that motivates the new investors to invest in mutual Fund as it is considered low risk and safer investment. Pakistan holds around 1.4 % assets of Mutual Fund of the world total Mutual fund assets (Bhatti et al, 2015). Pakistan Mutual fund industry is a rich industry in term of its range of funds. There are numerous funds categories like Equity, income, asset protected, balance, tracker and Islamic funds are traded in Pakistan (MUFAP). Over the years there have been many tools and many measures used for analysing the performance of Mutual funds. In early days the researcher Sharp (1964) analysed the stock performance through established ratio. After the introduction of Sharp ratio, Jenesen (1967) introduced Capital Asset Pricing Model, also known as CAPM for the performance analysis of stocks or funds. The CAPM describes the relationship between risk and expected return and that is used in the pricing of risky securities. After the single factor model developed by Jensen (1967), it was extended to 2-factors and 3- factors models by Fama French (1993).

Later on this asset pricing model was extended to 4-factor by Carhart (1997) who introduced another factor of momentum in the Fama French 3- factors model which was covering only size factor and value factors. All of these models have been widely used across the globe in measuring the performance of mutual funds, especially in developed countries. Besides these techniques, models like Data envelopment analysis (DEA), market timing, linear programing and some other techniques are also used for measuring the performance of mutual funds. In Pakistan most of the studies related to mutual funds 'performance are old and traditional in nature and very limited researchers have tested the mutual funds 'performance through competing models (Sipra, 2006; Afza and Rauf, 2009; Nazir and Nawaz, 2010). They all used traditional methods while evaluating the performance of Mutual Fund in Pakistan such as; sharp ratio, Treynor Ratio, and Jensen alpha.

None of the study is found which has used modern methods in evaluating Mutual fund performance in Pakistan. It then emerges a question about the validity of modern methods to the Mutual Fund. The managers of mutual funds, who directly involve in the investment and management, are the mutual fund managers, who search avenues which are very much attractive and profitable for the investors. The most determining function of mutual fund is to better deal with the unsystematic risk. Keeping in view the performance of fund managers, it is vital that the investors in fund should have trust on the managers who deal in funds management

1.2 Problem Statement

This research study conducted to examine the performance of mutual Fund industry in Pakistan with an assessment to determine the working efficiency of different types of funds, Rather than the fund performance evaluation, the individual

investors are handled with considerable haziness when it comes to their fund investment decision. Investors face a dizzying collection of choices. Investors are also subjected to a barrage of performance statistics on the funds. While these performance data provide indications of the fund manager skill, the investors clearly face a great contract of uncertainty about the quality of the signals. The study also try to study the expertise of the managers in capturing the market variation, as it is always a problem for the fund managers whether they can capture the market deviations in Pakistan. Outperforming the market is a challenge to the fund managers, in order to over perform market and industry. Therefore a comprehensive study needs to be conducted to know that how the fund's managers capture the market variations and whether the funds outperform the market return.

1.3 Objectives of the Study

1. To measure and evaluate the mutual fund performance through competing models i.e. CAPM, Fama French-3 and Carhart-4 factor Model.
2. To test and examine the validity of these models in quantifying Pakistani mutual funds' performance and decide which model better describe mutual fund performance.
3. To investigate the effect of fund factors i.e. fund size, fund age and fund liquidity on the mutual fund performance.
4. To know how the mutual fund managers capture the market variations.
5. To give suggestions on the bases of this study.

1.4 Research Question

1. Do CAPM, Fama French-3 and Carhart-4 factor model explain mutual fund performance in Pakistan?

2. Which Model among the three, better explain and predict the Mutual fund performance in Pakistan?
3. How the Mutual Fund managers capture the market variations in Pakistan and how the fund flow determinants effects the risk adjusted performance?
4. How risk adjusted return of these funds behave with market return?

1.5 Significance of the Study

1. As this study is conducted in Pakistani context so it will add quality literature from local perspective in the area of Mutual Fund performance.
2. This study uses more advanced tools for the analysis in Pakistani context, which are found rare in mutual fund performance evaluation studies in Pakistan.
3. This study will evaluates more extensive data set of all open ended mutual fund, which has been incepted since Jan 2011 to Dec 2016.
4. This study will help the fund managers to understand what returns are been provided by the market. This study will give the insight about their fund return in comparison to market return.
5. This study will help me academically to get my MS degree and will also help other researchers and academicians.

CHAPTER 2

LITRATURE REVIEW

2.1 Studies Based in Persistence of Funds in the World

Sharp (1966) conducted a study to evaluate mutual fund persistence. The study evidenced that the past performance fund will not have the same superior performance over the period of time. In similar study, Jeneson (1968) also explored the persistence of mutual fund and fund that it is not necessary that out performer in past will exhibit, the same performance longer ahead. While in similar study McDonald (1974) also analyzed funds for knowing their persistence over the period of time and reported that past performers do not comply with the same momentum over the period of time.

Chang (1984) analyzed equity funds for understanding that performance persistence and got similar results to that who agrees that past performer cannot continue for longer ahead. Similarly they also documented that the constancy of the mutual fund and fund that it is not as important as that out performer in past will show that. While in similar study McDonald (1974) also analyzed funds for knowing their persistence over the period of time and reported that past performers do not comply with the same momentum over the period of time.

Henriksson (1984) conducted their study and evaluate mutual fund performance persistence and agreed on that point that those mutual funds which

perform well in future does not having a superior performance in past and used the term icy hands in their study, emphasized a very relevant point "that past patterns yield a clue about which funds to avoid but do not provide strong indications about which funds will outperform their benchmark in the future. He also documented that mutual fund management greatly affect the fund performance of the firms. He added that mutual fund and fund performance playing very active role in the uplifting of firms financial performance.

In a similar study Grinblatt and Titman (1989) also analyzed the performance persistence of funds and found that all funds performing well in past cannot perform well in present and future as well. He also viewed that fund performance closely related to fund management. They documented that the relationship between various funds determinants and fund performance and stated that the fund age and size are vital determinants of the funds which influence the size adjusted performance of fund. They also reported statistically positive relationship between funds liquidity and fund performance. They explored that fund performance has positive and significant impact on the firm financial performance.

Ippolito (1989) also examined funds for significant their persistence over the period of time and stated that past performers do not comply with the same gesture over the period of time. They argued that the associations between the determinants of funds and its performance and fund that open ended funds have certain categories such as balanced fund, equity fund, income fund, money fund, index fund and Islamic sharia fund. The different portfolio of these funds has different return according to its use and management. They explored that mutual fund is the pool of money collected from different investors for the purpose of investing in different portfolio such as bonds and stocks and money market instruments (vargas et al.,2011). The style and

fashion of financial investment are not moveable and rapidly or sometimes slowly changing with the passage of time, not only in Pakistan but in the rest of world as well. Investor finds out various style of investment which imparts reasonable return and lower risk factor.

Kahn and Rudd (1995) evaluate mutual funds' performance persistence through similar and different angles and suggests that those funds which performed well in the past do not have the same output in future and present as well. They summarized that the behavior of investor prefer to mutual fund performance or socially reasonable investment that quietly adhere Islamic principles other than other kinds of mutual fund investment. Wang and Jabeen (2016) also examined mutual fund for the period of 2009 to 2015 in order to find the performance of fund in various sectors. They used sharap ratio, Jensom alpha and Treynor ratio for the analysis and interpretations of data. They documented that these entire ratio are showing positive and significant impact of fund performance. They further explained that the Jenson Alpha showed that some investors of mutual fund have good returned, in contrast of this some investor has got little return of the fund. They added that the overall ratios and test are showing positive and significant impact of funds' performance.

Bollen and Busse (2005) analyzed and evaluate mutual fund persistence in various funds. The study evidenced and found that the past performance fund will not have the same superior performance over the period of time. They also viewed that the performance of mutual fund effect the risk adjusted performance. They evidenced that various funds characteristics have different types of effect on the funds' performance. They argue that funds size is vital for funds better performance. So more size enhances the fund performance. They analyzed that fund performance has

also significant effect on fund performance. They further explained that liquidity is negatively associated with fund performance.

Ahmad et al. (2011) studied the Malaysian mutual fund and fund size for the period of March 2001 to December 2005. They analyzed the performance of funds with using of adjusted sharap ratio, Treynor ratio, adjusted Jenson and alpha indices. The results of his findings showed that fund size and fund performance has positive and significant effect on each other. But they also documented that fund size greatly affect the performance of funds. In addition they also claimed that the beta of fund size was lower than that of fund performance. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds.

Arvamove and Russ (2006) also conducted their study in the same area and evaluate mutual fund performance persistence and agreed that those mutual funds which perform well in past will do well in future but will not have the same momentum and not having a superior performance in past. They also evaluated and find performance using multifactor models and fond that Capital Assets Pricing Model (CAPM) can be a better predictor model as compare to the other models and traditional ratios. The study found that the expense ratio and fund cash flow can positively affect the fund performance. The same kinds of finding cannot be reported developing countries. The study used conditional Capital Assets Pricing Model (CAPM), Fama franch 3- factor and car hart. The study reported that majority of the portfolio intercepts are significant which determine the better performance of these portfolio.

Tiwari (2004) confined the study and found that there is quarter based persistence and he used the term "hot hands" for this after that this study was criticized by the researchers and they argue that as they found persistence of losing performance. Becker and Vaughan (2001) documented that a large numbers of factors affecting mutual funds' performance. They viewed that factors affecting mutual fund performance can be divided such as fund factors like fund size, expense ratio, fund style, fund age, fund fees and loads, fund flows and others factors related to fund family i.e. fund family size and management structure of the fund etc. similarly mutual fund manager as managerial tenure, experience and managerial education. Factors related to country's economic and financial development and country's border or geography in case of international fund etc, and also connected with the environment that affect mutual fund or where mutual funds operates such as economic and legal environment. They investigated that factors which affect mutual fund performance are usually the determinants of mutual fund flows, as performance is laterally the major determinant of funds flow. Brown and Goetzmann (1995) used the term icy hands in their study, emphasized a very relevant point "that past patterns yield a clue about which funds to avoid but do not provide strong indications about which funds will outperform their benchmark in the future".

Carhart (1997) evaluate mutual funds persistence and found that some funds disappear during the period of study and said that those funds will be over represented which are performing high during the study period. They documented that fund flow determinants impact the risk adjusted performance. They observed that different types of effect on the performance of fund are caused by different factors. They studied that funds size is vigorous for funds better uplifting and performance. They also confined fund performance using multifactor models and fond that Capital Assets Pricing

Model (CAPM) can be a better predictor model as compare to the other models and traditional ratios. The study found that the expense ratio and fund cash flow can positively affect the fund performance. They recommended that fund age has also effect on the performance of fund. evaluated the relationship between the determinants of funds and its performance and found that open ended funds have certain determinants i.e. expense ratio, fund age , management fee, cash flow, liquidity and fund size which effect the performance of fund the study evidenced that expense ratio has positive significant effect on the fund performance. The study also evidenced that fund age and size are also very vital which affect the risk adjusted performance of fund positively but found that liquidity negatively affect the performance.

In a similar study Daniel et al., (1997) also analyzed the performance persistence of funds and found that all funds performing well in past cannot perform well in present and future as well. formulated the funds and they studied that a very ambiguous type of persistence taken place which can be false in their nature as well, they used a term " look ahead bias" which might be result in a fake and foggy persistence. They elaborated the funds and their different waives of boom and recession in the market, thus they stated in their recommendations that a lot of funds disappears during these waives of high and low performing ranking levels in the market. They recommended that fund age has also effect on the performance of fund. evaluated the relationship between the determinants of funds and its performance and found that open ended funds have certain determinants i.e. expense ratio, fund age , management fee, cash flow, liquidity and fund size which effect the performance of fund the study evidenced that expense ratio has positive significant effect on the fund performance.

Wermers (1997) evaluated mutual funds and found that Survivorship favoritism is existed in the market because there is a quarterly bias persistence in the funds and some funds disappear during the study and their data is very difficult to catch for study. Similarly he also recommended that fund age has also effect on the performance of fund. He further evaluated the relationship between the determinants of funds and its performance and found that open ended funds have certain determinants i.e. expense ratio, fund age , management fee, cash flow, liquidity and fund size which effect the performance of fund the study evidenced that expense ratio has positive significant effect on the fund performance. He documented that the UK based market survey and studied the funds of UK industry for their analysis; they found that there is very rare chance of performance persistence in UK industry of mutual funds.

In connection to the above study Fletcher in (1999) again analyzed different fund of the same industry and hence argued that there is no such evidence of performance persistence in UK industry. Similarly he uses in his study 103 mutual funds and they apply a restricted measures on those under studies mutual funds and contended in their study that repeatedly the funds overtake the low performing funds in the market the risk factors is merely important in the selection of the funds in their views. They examined that the fund size has statistically positive and significant impact on the funds expense ratio the same was measured by yoong (2008). They documented that the relationship between mutual fund size and performance has been widely studied in mutual fund literature. The study evidence that majority of the portfolio model significantly affect the mutual fund performance. The same kinds of finding cannot be reported developing countries.

Yet Brown and Goetzmann (1995) analyzed equity funds for sympathetic that similar outcomes to that if there is any sort of some certainty still is very difficult to identify. They explored that the fund size has statistically positive and significant impact on the funds expense ratio the same was measured by Bollen (2007). They documented that the relationship between mutual fund size and performance has been widely studied in mutual fund literature. The study evidence that majority of the portfolio model significantly affect the mutual fund performance. The same kinds of finding cannot be reported developing countries. The study used conditional Capital Assets Pricing Model (CAPM), Fama franch 3- factor and car hart. The study evidence that majority of the portfolio model significantly affect the mutual fund performance. The same kinds of finding cannot be reported developing countries. The study reported that majority of the portfolio intercepts are significant which determine the better performance of these portfolio.

Wermers (2000) explained the mutual funds persistence in his study and found that there are a lot of other factors besides managerial ability in the mutual funds persistence. In a similar study Stambaugh (2002) also studied the performance persistence of funds and initiate that most of the mutual fund persistence is due other factors other than managerial ability and tactics. In 2005 tow researchers Bollen and Busse studied the funds and from the fund flow and investors viewpoint and found that the most of money savers and investors are providing their money to the managers directly by killing the risk associated on achieving highest rate of returns on the their investment.

In a similar study Berk and Green in 2004 documented the funds the viewpoint of fund flow and investors and institute that the maximum of money investors are killing the risk associated on attaining uppermost rate of earnings on the

their investment and are giving their money to the managers directly. Hendricks et al. (1993) inspected the funds and used the phenomenal term “hot hands” for this after that this study was censured by the researchers and they claim that as they found persistence of losing performance and also told that these funds will not have the same motion and performance persistence.

Goetzmann and Ibboston, (1994) analyzed the study showed that for a the period of time the performance of different funds does not exist for anonymous time period and also does not means the funds which are having a superior performance history does not has the surety to be perform good in future.

Fletcher (1999) analyzed the UK based market survey and studied the funds of UK industry for their analysis; they found that there is very rare chance of performance persistence in UK industry of mutual funds.

In connection to the above study Fletcher in 1999b again analyzed different fund of the same industry and hence argued that there is no such evidence of performance persistence in UK industry. Quigley and Sinquefield (2000) studied the funds and concluded in their study that there is some performance persistence in funds but the level and intensity of those funds persistence is very poor in nature. Lundeat al. (1999) considered the funds and determined in their study that performance persistence is occurring in a lot of funds and also there is a variation as well. In a similar study Timmerman in (1998) explored the funds and study the nature and intensity of these funds in performance perspective point of views, he state that keeping so many factors in the loop we can say that the performance persistence is taking place in mutual funds. Allen and Tan (1999) documented in their study that in short run the performance is not found in larger scale which can be generalize for the

statement but in the long run of the funds they both strongly supported and explain the existence of performance persistence.

Similarly famous researchers Hefferman in (2001) in same nature of study found some very surprising indication of performance persistence in short run of mutual funds. They studied the Malaysian mutual fund and fund size for the period of March 2001 to December 2005. They analyzed the performance of funds with using of adjusted sharap ratio, Treynor ratio, adjusted Jenson and alpha indices. The results of his findings showed that fund size and fund performance has positive and significant effect on each other. But they also documented that fund size greatly affect the performance of funds. In addition they also claimed that the beta of fund size was lower than that of fund performance. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds.

Dimsin and Minio Kozerski (2001) examined the funds and concluded in his research finding that there is no such sign of performance persistence in the UK based industry. Tonks (2005) measured and examined the funds and hence he proved in their findings that there is a much stronger persistence in the performance recorded in the UK market.

Horst and Verbeek (2000) conducted a research study to appraise persistence in mutual funds. The study demonstrated that the past presentation of different funds shows a great variation and resemblance in persistence, for studying the performance

of those funds he reported that large scale persistence is happen in the performance of those funds.

In linking to the above study Horst et al. (2001) formulated the funds and they studied that a very ambiguous type of persistence taken place which can be false in their nature as well, they used a term " look ahead bias" which might be result in a fake and foggy persistence. They elaborated the funds and their different waives of boom and recession in the market, thus they stated in their recommendations that a lot of funds disappears during these waives of high and low performing ranking levels in the market.

Blake et al. (1999) in their study uses 63 mutual funds and they apply a restricted measures on those under studies mutual funds and contended in their study that repeatedly the funds overtake the low performing funds in the market the risk factors is merely important in the selection of the funds in their views. They examined that the fund size has statistically positive and significant impact on the funds expense ratio the same was measured by Tang (2007). They documented that the relationship between mutual fund size and performance has been widely studied in mutual fund literature. The study evidence that majority of the portfolio model significantly affect the mutual fund performance. The same kinds of finding cannot be reported developing countries. The study used conditional Capital Assets Pricing Model (CAPM), Fama franch 3- factor and car hart. The study reported that majority of the portfolio intercepts are significant which determine the better performance of these portfolio

Warther (1996) examined mainly the tow important mutual funds both open ended and closed ended funds, they have analyzed the segmented data of for their

observation and considered that loss performance exist in the both the open ended funds and close ended funds. Similarly, Anderson et al., (1996) documented their study with their other friend's researchers in examined bond funds, and they stated that the outperformances in the funds at international level are wrong. They also analyzed that equity fund using multi factor models to predict the mutual fund performance. The study evidence that majority of the portfolio model significantly affect the mutual fund performance. The same kinds of finding cannot be reported developing countries. The study used conditional Capital Assets Pricing Model (CAPM), Fama franch 3- factor and car hart. The study reported that majority of the portfolio intercepts are significant which determine the better performance of these portfolio.

Geenbatt (2008) also evaluated and find performance using multifactor models and fond that Capital Assets Pricing Model (CAPM) can be a better predictor model as compare to the other models and traditional ratios. The study found that the expense ratio and fund cash flow can positively affect the fund performance. Similarly, Zou et al.(2008) documented their study with their other friend's researchers in examined bond funds, and they stated that the outperformances in the funds at international level are wrong. They also analyzed that equity fund using multi factor models to predict the mutual fund performance. The study evidence that majority of the portfolio model significantly affect the mutual fund performance. The same kinds of finding cannot be reported developing countries. Cumby and Glen, (1990), examined the bond funds and stated that in previous researches the general notation about the out performance of different international funds is false and but they found some sign of underperformance in the bond for those which trading at

international level only. In a similar study Fama French formulated a three-factor model (1993) in addition to the already momentum.

Jensen (1968) model and reported that selected portfolio return are very sensitive. Murthi et al (1997) investigated the efficiency the investment funds through DEA Technique and found that some of the portfolios of fund were quite efficient in performing. Fama French (1993) used 2factor and 3-factor model for the performance evaluation of funds and found different results for market factor, size factor and value factor. He found that value and size factors also affect the fund performance significantly rather than the market factor. The same model was applied by Caietal (1997) and found that market factor better explain the funds return than value and size factor. The researcher found results different from the previous researcher in term of size and value factor. Unlikely the previous researchers, Carhart (1997) used 4-factors model for the performance evaluation of funds and stock portfolio. The researcher evidenced similar results for the market, value and size factor, very much inconsistent with that of Fama French (1993). He added one new factor of momentum, which can affect the funds return. He found that the fund outperform the market in term of all its four factors. The same 4-factor model was tested by Otten and Bams (2002) and found similar results for the first three factor very much consistent with the findings of Carhart (1997) but only found results in contrast for its momentum factor in which he evidenced poor performance by the funds. In a similar study the funds were found outperform market in term of all 4-factors, thereby documenting the results of the previous researchers, who found that all equity funds outperform the market in term of market factor, size, value and momentum factor EGB (2004).

Carhart, (1997) projected a modified 4 factor model which do have the factors of the Fama French three factors model, thus the Carahart's (1997) four-factor model has got extra prominence position in the evaluation and performance measurement of mutual funds. Rehman and Baloch (2016) evaluated Mutual Fund performance using sharp ratio for the calculation of the fund's adjusted return and found that most of the funds do not outperform market return. They also found that most of the fund's attributes like expense ratio, management fee, Fund size and Fund age has an impact on Fund's adjusted return. Kahn and Rudd, (1995) analyzed the models using some new techniques in this era; they found CAPM, which is presenting substance results for all of its funds selections; though they found an increasing accumulative nature of size in their intercepts. And also the performance of the portfolios selected was very reduced and poor for those out performing portfolios as well.

Rehman and Baloch (2016) evaluated Mutual Fund Performance through CAPM andFama French 3-Factor model and found that CAPM explain the mutual Fund Performance well than the Fama French 3-Factor models. The CAPM was found, showing substance outcomes for all of its portfolios; however the intercepts of this model were found increasing in size, showing poor performance for the high performance portfolios. The Fama French 3-factor model also evidenced very poor results for size and value factor but the market factor seemed good. The GRS was applied to find the finest model between the two competing models. The GRS revealed that CAPM is the preferred model between these two competing models. The CAPM results showed that the majority of Mutual Funds do not suitably capture the market variation in Pakistan. These results of Fama French 3-factor model are in contrast to the findings of some previous researcher who explored the mutual fund

performance in developed world and found the fund's managers capturing well the value and size factor as well (EGB, 2004, Huiji and Verbeek, 2006).

Giofre et al (2013) have explained various funds for understanding the persistence and analyzed and agreed that past performer funds can be a vital performers in future. Kahn and Rudd (1995) evaluate mutual funds' performance persistence through similar and different angles and suggests that those funds which performed well in the past do not have the same output in future and present as well. They summarized that the behavior of investor prefer to mutual fund performance or socially reasonable investment that quietly adhere Islamic principles other than other kinds of mutual fund investment. Wang and Jabeen (2016) also examined mutual fund for the period of 2009 to 2015 in order to find the performance of fund in various sectors. They used sharap ratio, Jensom alpha and Treynor ratio for the analysis and interpretations of data. They documented that these entire ratio are showing positive and significant impact of fund performance. They further explained that the Jenson Alpha showed that some investors of mutual fund have good returned, in contrast of this some investor has got little return of the fund. They added that the overall ratios and test are showing positive and significant impact of funds' performance.

In a similar study Konand (1979) also analyzed the performance persistence of funds and found that all funds performing better in past can perform well in present as well. The study suggests that asset manager should work to improve the performance of funds in future. They analyze equity fund using multi factor models to predict the mutual fund performance. The study evidence that majority of the portfolio model significantly affect the mutual fund performance. The same kinds of finding cannot be reported developing countries. The study used conditional Capital Assets Pricing Model (CAPM), Fama franch 3- factor and car hart. The study reported that majority

of the portfolio intercepts are significant which determine the better performance of these portfolio. They also conducted the studies in early days of 1990s and recommended that there is phenomenal performance persistence in the mutual funds and also state that, the persistence in the performance is due to a lot of important factors and determinants which compelled the funds towards persistency in their performances.

Jegadeesh and Titman (1993) investigated the funds and the nature of different factors which driven the persistency in funds performances, they showed that a large scale momentum is found in the persistency of mutual funds. They prolonged their evidences of the persistency and hence stated that those funds which are showing annually continue momentum and motion in their performances are tending to perform well and outclass in future as well. They evaluated analyzed the must performance using Capital Assets Pricing Model (CAPM), and Fama French -3 factor models and used the data of 100 open ended Pakistan mutual fund. The study evidenced that both model predicts and explain the fund performance. But Capital Assets Pricing Model (CAPM) was fond a better model to predict and explain the mutual fund performance. The study suggested that other sophisticated models can also be tested in evaluating the mutual performance in Pakistan.

Afza and Raif (2009) also evaluated the Pakistan mutual fund performance using traditional measure and Capital Assets Pricing Model (CAPM). The study found that while using traditional sharp ratio, the funds do not mostly outperform the market and also predicted that fund expense ratio and size have positive affect on the fund's risk adjusted performance. They also examined the bond funds and stated that in previous researches the general notation about the out performance of different international funds is false and but they found some sign of underperformance in the

bond for those which trading at international level only. In a similar study Fama French formulated a three-factor model (1993) in addition to the already momentum.

Carhartet et al. (2002) examined the funds and institutes that funds execution efficiently for more than three quarters and by keeping the same move in their performance the funds are more likely to perform well in the coming years as well. But at the same time they do not appreciate this perception on the basis of which managers diverting the investors towards those funds for getting abnormal revenues from their investments in futures. The study found that while using traditional sharp ratio, the funds do not mostly outperform the market and also predicted that fund expense ratio and size have positive affect on the fund's risk adjusted performance. They also examined the bond funds and stated that in previous researches the general notation about the out performance

Lehmann (1987) explained the performance persistence in analyzing fund and found that some funds do perform better in future when performing better in past, also found that some funds do not perform well while keeping in view their performance, Modest, (1987) also analyzed funds to predict their performance persistence and documented that some funds perform well, while other do not perform well. . They also examined to understand the timing and selection abilities. The study showing that most funds have often good timing abilities and they are also having very good selection abilities. They further explained that the study to analyze the fund performance.

Malkiel (1995) studied numerous funds for understanding the persistence and analyzed to predict their performance persistence and documented that some funds perform well, while other do not perform well. They further analyze that equity fund

using multi factor models to predict the mutual fund performance. The study evidence that majority of the portfolio model significantly affect the mutual fund performance. The same kinds of finding cannot be reported developing countries. The study used conditional Capital Assets Pricing Model (CAPM), Fama franch 3- factor and car hart. The study reported that majority of the portfolio intercepts are significant which determine the better performance of these portfolio.

Geenbatt (2008) also evaluated and find performance using multifactor models and fond that Capital Assets Pricing Model (CAPM) can be a better predictor model as compare to the other models and traditional ratios. The study found that the expense ratio and fund cash flow can positively affect the fund performance. They documented that the relationship between mutual fund size and performance has been widely studied in mutual fund literature. The study evidence that majority of the portfolio model significantly affect the mutual fund performance. The same kinds of finding cannot be reported developing countries. The study used conditional Capital Assets Pricing Model (CAPM), Fama franch 3- factor and car hart. The study reported that majority of the portfolio intercepts are significant which determine the better performance of these portfolio.

Grinblatt and Titman (1992) studied mutual funds and he state that specific mutual fund persistence performance had fragile support. They also examined to understand the timing and selection abilities. The study showing that most funds have often good timing abilities and they are also having very good selection abilities. They further explained that the study to analyze the fund performance. The study viewed that these funds using the correlation and regression models. They stated that majority of mutual fund do not have sufficient timing abilities. The study also showing that the most of fund also do not have enough selection abilities as well.

In similar study the Kahn and Rudd (1995) evaluated different mutual funds and state that performance persistence exist in some fixed mutual funds and he said that performance persistence is not exist in equity. They evaluated analyzed the must performance using Capital Assets Pricing Model (CAPM), and Fama French -3 factor models and used the data of 100 open ended Pakistan mutual fund. The study evidenced that both model predicts and explain the fund performance.

Elton et al (1996) examined mutual funds in their study and found that over a period of three years the risk-adjusted return is predictive of future performances. They further evaluated and find performance using multifactor models and fond that Capital Assets Pricing Model (CAPM) can be a better predictor model as compare to the other models and traditional ratios. The study found that the expense ratio and fund cash flow can positively affect the fund performance. He also analyzed that most of the equity fund using multi factor models to predict the mutual fund performance. The study evidence that majority of the portfolio model significantly affect the mutual fund performance. The same kinds of finding cannot be reported developing countries. The study used conditional Capital Assets Pricing Model (CAPM), Fama franch 3- factor and car hart. The study reported that majority of the portfolio intercepts are significant which determine the better performance of these portfolio.

Pastor and Stambaugh (2002) evaluated mutual funds and said that outside the US other than the managerial ability performance persistence exist due other factors. He also asserted that the performance of funds expense over the fund performance and found that there is linear correlation between expense ratio and fund performance. They argue that more expenses means more ensured performance. They documented that as the fund take more expenses for the management of the funds it will ensure the better performance of fund. They explained that equity funds for understanding that

performance persistence and got similar results to that who agrees that past performer cannot continue for longer ahead. Similarly they also documented that the constancy of the mutual fund and fund that it is not as important as that out performer in past will show that. While in similar study McDonald (1974) also analyzed funds for knowing their persistence over the period of time and reported that past performers do not comply with the same momentum over the period of time.

Gruber (1996) studied the nature and persistence of funds taking different factors to under consideration. He found that certain funds do perform better in future when they are having a past history of better performance, but this is not the universal or general statement as they argue that few funds did not perform well although they had a good history in the past. He also examined the impact of different variables on expense ratio, he state that the size, nature and age of the mutual funds also impact on the expense ratio. He suggest that before deciding about investment the investors should gather all information related to expenses about different funds and also the other aspects of those funds to make rational decision about their investment. He also documented that a lot of many other studies conducted about mutual funds which covered the qualitative features and determinants of mutual funds like management styles, economies of scale, investment strategy, and investor's preferences bring an effective impact on the expense ratio.

Modest (1987) also evaluated funds to foresee their performance persistence and hence shows that there is mixed sort of approach about performance persistence means some have a good performance and few have not well. They confined that equity funds for understanding that performance persistence and got similar results to that who agrees that past performer cannot continue for longer ahead. Similarly they

also documented that the constancy of the mutual fund and fund that it is not as important as that out performer in past will show that. While in similar study chang (1998) also analyzed funds for knowing their persistence over the period of time and reported that past performers do not comply with the same momentum over the period of time. They argue that more expenses means more ensured performance. They documented that as the fund take more expenses for the management of the funds it will ensure the better performance of fund. They explained that equity funds for understanding that performance persistence and got similar results to that who agrees that past performer cannot continue for longer ahead.

2.2 Mutual Funds' Performance Studies Based on Expense Ratio

Barbar et al. (2003) analyzed funds for their evaluation. The study evaluated various funds and found that various expenses of funds can be effect the performance of the fund. The study correlated with the funds return. They examined the Malaysian mutual fund and fund size for the period of March 2001 to December 2005. They analyzed the performance of funds with using of adjusted sharap ratio, Treynor ratio, adjusted Jenson and alpha indices. The results of his findings showed that fund size and fund performance has positive and significant effect on each other. But they also documented that fund size greatly affect the performance of funds. In addition they also claimed that the beta of fund size was lower than that of fund performance. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds. Gruber (1996) in explored different funds and state that most of the investors do not

purchasing high operating funds, normally the fund investors pay different types of fee to the mutual funds when they are investing through load fees charges.

In a similar study Carhart (1997) examined that when the investors want to purchase the funds through brokers they are bound to pay some commission to them, but this is not applicable on other funds. He states that the investors try to avoid these fees while purchasing funds. He also evaluated the Pakistan mutual fund performance using traditional measure and Capital Assets Pricing Model (CAPM). The study found that while using traditional sharp ratio, the funds do not mostly outperform the market and also predicted that fund expense ratio and size have positive affect on the fund's risk adjusted performance. They also investigated that equity fund using multi factor models to predict the mutual fund performance. The study evidence that majority of the portfolio model significantly affect the mutual fund performance. The same kinds of finding cannot be reported developing countries. The study used conditional Capital Assets Pricing Model (CAPM), Fama franch 3- factor and car hart. The study reported that majority of the portfolio intercepts are significant which determine the better performance of these portfolio. EGB (2004) also explored the performance of funds and found their various characteristics using various models for knowing the risk adjusted performance. The study reported that expense ratio is vital explain the funds return.

Joness and Nigro (1998) also asserted the performance of funds expense over the fund performance and found that there is linear correlation between expense ratio and fund performance. They argue that more expenses means more ensured performance. They documented that as the fund take more expenses for the management of the funds it will ensure the better performance of fund. Wilcox (1998) examined funds and he take fifty different consumers, form those who invested in

mutual funds and which are having different load combinations and expense ratios. And he found that out of 50 investors 46 investors do not like the load fee in the cost expense ratio. In a similar study Sirri and Tufano (1998) examined funds and found that there is an adverse correlation between the flow of funds and expenses.

Soo Wah Low (2008) analyzed various funds for knowing the relationship between expense ratio and fund performance and evaluated that better performance of fund can be obtained if a fund go for taking more expense. In a similar study Babalosy at el (2009) examined the Greek equity funds and found the impact of cost and expense ratio on funds. They viewed that mutual fund performance has positive and statistically significant impact on Greek equity fund. Geranio and Zanotti (2005) evaluated Italian mutual funds and comprehensively explored that the expense cost ratio of the Italian funds and the impact of these funds' performance on it. Rompotis (2008) also explained the relationship between fund expenses and fund performance and reported that expense ratio is very significant for enhancing the fund performance. The study suggested that fund can outperform if it takes more expense.

Molson (2003) also examined the performance of funds and suggested that the mutual funds size has significant impact on the expense ratio. They analyzed that funds having larger size will have lower expense ratio. Tang Cheong (2007 in his study evaluate mutual funds and state that there is due to the economies of scale and management skills and tactics their exist a huge impact on the expense ratio. The bigger the size of the funds the lower will be the expense ratio. Marzuki et al. (2011) studied the Malaysian mutual fund and fund size for the period of March 2001 to December 2005. They analyzed the performance of funds with using of adjusted sharap ratio, Treynor ratio, adjusted Jenson and alpha indices. The results of his findings showed that fund size and fund performance has positive and significant

effect on each other. But they also documented that fund size greatly affect the performance of funds. In addition they also claimed that the beta of fund size was lower than that of fund performance. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds.

In similar study the Kahn and Zera et al (2007) evaluate mutual funds and found that is in reduction of different managerial cost and improved economies of scale there is an impact of expense ratio, the expense ratio will be lower if the size of the funds will be larger. Laplante (2001) examined the impact of different variables on expense ratio, he state that the size, nature and age of the mutual funds also impact on the expense ratio. He suggest that before deciding about investment the investors should gather all information related to expenses about different funds and also the other aspects of those funds to make rational decision about their investment. He also documented that a lot of many other studies conducted about mutual funds which covered the qualitative features and determinants of mutual funds like management styles, economies of scale, investment strategy, and investor's preferences bring an effective impact on the expense ratio.

Berk, J. B. et al. (2004) analyzed the funds to create a standard to assessment the performance-flow association, they used three main factors and we can say the key rudiments, the capability of managers to make remarkable revenues, the techniques and past experiences to generate high returns in future on the basis of those skills and ideas and the limited money the investors are willing to invest as capital. Del Guercio, et al. (2002) in a similar study the two very important funds that

is the pension funds and equity mutual funds , they evaluate the variations of the flow of performance in in models keeping the above two distinctive types of mutual fund which are pension funds and equity funds. in a similar study of literature Frank, L. (2010) examined the huge decrease of more than 60 percent in the expense and cost ratio of mutual funds, and also show that these are the main determinants and factors which mainly disturbed the flow of mutual funds performances in the market. The research studies held in this era in the by considering the factors which effects the expense ratio has been shown in past that there is an inverse proportion of fund performances and the expense ratio.

Haslem et al. (2007) studied that mutual funds and make a group of mutual funds which are having high management and fee expense ratio, and accordingly they evaluated and experiment the relationship of these two variable with the graphic mutual funds' performance. However when we look back the research thesis shows that there are abundant level of information and data is available of mutual funds' performance flow but on the other hand there is very little level of studies conducted on the other factors like the fee and their structure, expense ratio, which have a strong effect on the performance of mutual funds. No such testing model and tools is available for testing these two factors fee structure and expense ratio. Although we can see that an adequate amount of literature data is available of the expense ratio of mutual funds and performance.

Garyn 2015) investigated the data of mutual fund performances from 2001 to 2010 and hence she make some sample from these financial years and on the basis of their nature she describe those samples and examined the results, she again divided their samples into two groups of 5 years based data; one consist from 2001 to 2006 and the second from 2007 to 2010. By passing these data through regression analysis

she concluded that the performance of funds are negatively correlated with expense ratio, and similarly she documented from the other sample test that in some cases the expense ratio is having a very little level of association and impact on the performance of fund. Keeping the final recommendation of this study in mind we can say that the expense ratio have a powerful impact on the performance of funds.

Aitenov (2013) confined that the association of different factors and the expense ratio. He classified the funds on the basis of different factors and also on the basis of financial years as well. Arithmetical analysis applied on these samples based funds and different sections. He found that there is the under studied factors like age factors, size factors, load factors and performance factors all these factors having a relatively negative impact the funds expense ratio. While the revenues and instability had a relatively positive impact.

Ferris and Chance (1987) formed mainly focused the four different models which also supported by other variables and 12b1 plan, all these tactics were used to fine the relationship of all those documented variables with funds expense ratio. The above mentioned 12b 1 plan was recently applied in the time the research study so they connect this plan with other variables to know about the nature and intensity of impact over the expense ratio. Ferris and Chance take the data of a US based company, and formulated around 300 hundred different samples from that data. . Outcomes displayed mixed impact of around 25 percent to 50 percent type and size of the funds, and the fluctuations in the expense ratio. They also suggest that in both the factors are very much effective across all models and they only considered the results of the data of the 1st year which was 1984 which was significant.

2.3 Pakistani Studies based on Mutual Fund Performance.

Mehreen and Nawazish (2011) examined the mutual fund performance of Pakistani industry and for more than 5 years of period from 2006 to 2010, they found that is there is a strong growth in the Islamic funds as compared to the conventional investment funds. They found that there is a negative alpha which actually means that no fund is outperformed the market. They argue that all funds did not capture market variations and did not outperform good. Afza and Rauf (2009) evaluate mutual fund performance and thoroughly examined the factors mutual fund performances in Pakistan. Afza and Rauf (2009) used quarterly Sharp ratio for the period 1999 to 2006 for about 6 years open ended mutual funds data. They agreed that most of the funds factors are insignificant and shows that the past returns are predicting future returns and similarly other determinants like funds size, and cost expense ratio are impacting funds performances insignificantly in Pakistan.

In a similar kind of study Nazir and Nawaz (2010) explained the mutual funds factors and other determinants in details and show that most of them are insignificant and irrelevant in nature. They take open ended funds for more than 5 years for study and found that most of the funds determinants are insignificant. Nazir and Nawaz studied 13 mutual funds and they resulted that the size of the asset is having a positive impact on mutual fund performance. Sipra (2006) in their study evaluate mutual funds and found that around 30 percent of the mutual funds under study outperform good in the market. In connection to this study Sipra, the Shah and Hijazi (2005) examined the fund and has agreed upon that the funds which are outperforming is just because of the limited sample taken for study as compared to the research study of Sipra (2006).

Saeed (2004) evaluated mutual fund industry of Pakistan and found that there is growth in Pakistani industry which is due to the mangers and controllers of these

funds in the industry and if there will be a strong corporate governance there will be a positive and remarkable output of the Pakistani mutual funds.

Nafees et al. (2013) studied the performance of mutual funds by taking the level of risk associated with these funds. They also conducted the study For finding the risk the study based on the technical measure such as alpha, beta, and standard deviation and the models such as GARCH and ARCH. This study investigated the open ended and close ended mutual funds. The outcomes discovered that the open ended funds are less risky than close ended mutual funds. It was suggested that supervisors need to be more active to capture the market instability.

2.4 Funds Flow Determinants and Funds' Performance.

Rehman and Baloch (2016) analyzed the relationship between the determinants of funds and its performance and found that open ended funds have certain determinants i.e. expense ratio, fund age , management fee, cash flow, liquidity and fund size which effect the performance of fund the study evidenced that expense ratio has positive significant effect on the fund performance. They analyzed that funds size is vital for funds better performance and uplifting. They suggested that fund age has also significant effect on the fund performance. They examined that liquidity is rarely positive concerned with performance of fund. The study also evidenced that fund age and size are also very vital which affect the risk adjusted performance of fund positively but found that liquidity negatively affect the performance. They observed that different types of effect on the performance of fund are caused by different factors. They studied that funds size is vigorous for funds better uplifting and performance. They recommended that fund age has also effect on the performance of fund. They analyzed the relationship between the timing selection abilities and fund selection abilities. They asserted that the fund flow determinants

effect the fund ability and times selection. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds.

Rauf and Afza (2010) asserted that fund flow determinants affect the risk adjusted performance. They evidenced that various funds characteristics have different types of effect on the funds' performance. They argue that funds size is vital for funds better performance. They argued that fund age has also significant effect on the fund performance. They demonstrated that different funds characteristics have different types of effect on the performance of funds. They contend that for a better performance size of funds is essential. They observed that different types of effect on the performance of fund are caused by different factors. They studied that funds size is vigorous for funds better uplifting and performance. They recommended that fund age has also effect on the performance of fund. They analyzed the relationship between the timing selection abilities and fund selection abilities. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds. They asserted that the fund flow determinants effect the fund ability and times selection. They argued that fund age has also significant effect on the fund performance. And suggested that liquidity is adversely related with performance of funds. They predicted that liquidity is negatively associated with fund performance.

Nazir and Nawaz (2010) also investigated the relationship between various funds determinants and funds' performance and stated that funds age and size are vital determinants of the funds which influence the risk adjusted performance of fund. They observed that different types of effect on the performance of fund are caused by different factors. They also examined the relationship of funds and performance and argue that open ended funds have certain factors i.e. age of the fund, expense ratio, liquidity and size of the funds, which largely affect the performances of the mutual funds. The study showed that expense ratio has positive impact on the performance of mutual funds. They studied that funds size is vigorous for funds better uplifting and performance. They recommended that fund age has also effect on the performance of fund. They also reported negative relationship between funds liquidity and funds' performance. The study reported that fund size have positive and significant relationship with fund performance and fund that the study asserted that age of the fund is very well in affecting the fund performance. He also examined that the relationship between various funds determinants and fund performance and stated that fund age and size are vital determinants of the funds which influence the risk adjusted performance of fund. They also noted statistically negative relationship between funds liquidity and fund performance. They also investigated the impact of funds features on fund performance and found that various funds flows have different kinds of relationship with funds outcome. The sated that the fund have a relatively positive relationship the performance of mutual funds and the study also suggest that age and maturity of fund is also very important and predicting the fund performance.

Faria (2013) investigated the impact of funds characteristics on fund performance and reported that various funds flows have different kinds of

relationship with funds return. They study reported that fund size have positive significant relationship with funds' performance and fund that the study assessed that age of the fund is very pivotal as well in affecting funds' performance. In a similar study of the previous literature they explored the correlation between funds' performance and various funds determinants and specified that the size of the funds and size are very important determinants of the funds which effect performance of fund. The study reported that fund size have positive and significant relationship with fund performance and fund that the study asserted that age of the fund is very well in affecting the fund performance. He also examined that the relationship between various funds determinants and fund performance and stated that fund age and size are vital determinants of the funds which influence the risk adjusted performance of fund. They also noted statistically negative relationship between funds liquidity and fund performance. In their study they also described a negative relationship existence between funds' performance and liquidity of the fund. The study showed that expense ratio has positive impact on the performance of mutual funds. They studied that funds size is vigorous for funds better uplifting and performance. They recommended that fund age has also effect on the performance of fund. They viewed that different funds characteristics have different types of effect on the funds' performance. They analyzed that funds size is vital for funds better performance and uplifting. They examined that the different kinds of funds characteristics have different types of effect on the performance of funds. They contend that for a better performance size of funds is essential. They observed that different types of effect on the performance of fund are caused by different factors. They studied that funds size is vigorous for funds better uplifting and performance. They recommended that fund age has also effect on the performance of fund.

Agarwal and Ray (2013) confined that fund flow characteristics impact the risk adjusted performance. They viewed that different funds characteristics have different types of effect on the funds' performance. They analyzed that funds size is vital for funds better performance and uplifting. They suggested that fund age has also significant effect on the fund performance. They examined that liquidity is rarely positive concerned with performance of fund. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds. In very similar studies they examined the Malaysian mutual fund and fund size for the period of March 2001 to December 2005. They analyzed the performance of funds with using of adjusted sharap ratio, Treynor ratio, adjusted Jenson and alpha indices. The results of his findings showed that fund size and fund performance has positive and significant effect on each other. But they also documented that fund size greatly affect the performance of funds. They recommended that fund age has also effect on the performance of fund. evaluated the relationship between the determinants of funds and its performance and found that open ended funds have certain determinants i.e. expense ratio, fund age , management fee, cash flow, liquidity and fund size which effect the performance of fund the study evidenced that expense ratio has positive significant effect on the fund performance.

Daniel et al. (2009) also explored the association between numerous funds factors and funds' performance and found that funds size and age are important factor of the funds which effect the risk adjusted performance of fund. They also stated that negative relationship between funds' performance and fund liquidity.

They documented that fund flow determinants impact the risk adjusted performance. They observed that different types of effect on the performance of fund are caused by different factors. They studied that funds size is vigorous for funds better uplifting and performance. They also confined fund performance using multifactor models and fond that Capital Assets Pricing Model (CAPM) can be a better predictor model as compare to the other models and traditional ratios. The study found that the expense ratio and fund cash flow can positively affect the fund performance. They viewed that factors affecting mutual fund performance can be divided such as fund factors like fund size, expense ratio, fund style, fund age, fund fees and loads, fund flows and others factors related to fund family i.e. fund family size and management structure of the fund etc. similarly mutual fund manager as managerial tenure, experience and managerial education. Factors related to country's economic and financial development and country's border or geography in case of international fund etc, and also connected with the environment that affect mutual fund or where mutual funds operates such as economic and legal environment.

Clifford (2013) studied the impact of funds features on fund performance and found that various funds flows have different kinds of relationship with funds outcome. The sated that the fund have a relatively positive relationship the performance of mutual funds and the study also suggest that age and maturity of fund is also very important and predicting the fund performance. He also viewed that the impact of funds characteristics on fund performance and also noticed that various funds flows have different kinds of association with funds return. The study reported that fund size have positive and significant relationship with fund performance and fund that the study asserted that age of the fund is very well in affecting the fund performance. He also examined that the relationship between various funds

determinants and fund performance and stated that fund age and size are vital determinants of the funds which influence the risk adjusted performance of fund. They analyzed the performance of funds with using of adjusted sharap ratio, Treynor ratio, adjusted Jenson and alpha indices. The results of his findings showed that fund size and fund performance has positive and significant effect on each other. But they also documented that fund size greatly affect the performance of funds. They also noted statistically negative relationship between funds liquidity and fund performance.

Nanda et al. (2015) examined the relationship of funds and performance and argue that open ended funds have certain factors i.e. age of the fund, expense ratio, liquidity and size of the funds, which largely affect the performances of the mutual funds. The study showed that expense ratio has positive impact on the performance of mutual funds. They suggested that fund age has also effect on the performance of fund. They analyzed the relationship between the timing selection abilities and fund selection abilities. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds. They asserted that the fund flow determinants effect the fund ability and times selection. They argued that fund age has also significant effect on the fund performance. They sated that the fund have a relatively positive relationship the performance of mutual funds and the study also suggest that age and maturity of fund is also very important and predicting the fund performance. He also viewed that the impact of funds characteristics on fund performance and also noticed that various funds flows have different kinds of association with funds return. The

study reported that fund size have positive and significant relationship with fund performance and fund that the study asserted that age of the fund is very well in affecting the fund performance. The study reported that fund size have positive and significant relationship with fund performance and fund that the study asserted that age of the fund is very well in affecting the fund performance.

Bollen and Pool (2009) emphasized that fund flow determinants also affect the risk adjusted performance of funds. They demonstrated that different funds characteristics have different types of effect on the performance of funds. They contend that for a better performance size of funds is essential. They argued that fund age has also significant effect on the fund performance. They examine and suggested that liquidity is adversely related with performance of funds. They analyzed the association of fund performance and fund determinants and recorded that open ended mutual funds have certain determinants such as expense ratio, fund age, management fee, cash flow, liquidity and the size of fund which influence the performance fund the study evidenced that expense ratio has also positive and significant impact on the performance of fund. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds. They further explored that fund age and fund size are also very important which affect the risk adjusted performance of fund positively but found that fund liquidity are negatively affect the fund performance. They contend that for a better performance size of funds is essential. The study reported that fund size have positive and significant relationship with fund performance and fund that

the study asserted that age of the fund is very well in affecting the fund performance. They argued that fund age has also significant effect on the fund performance.

Fung and Hasieh (2000) documented that fund flow determinants impact the risk adjusted performance. They observed that different types of effect on the performance of fund are caused by different factors. They studied that funds size is vigorous for funds better uplifting and performance. They recommended that fund age has also effect on the performance of fund. They analyzed the relationship between the timing selection abilities and fund selection abilities. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds. They asserted that the fund flow determinants effect the fund ability and times selection. They argued that fund age has also significant effect on the fund performance. They sated that the fund have a relatively positive relationship the performance of mutual funds and the study also suggest that age and maturity of fund is also very important and predicting the fund performance. They analyzed the performance of funds with using of adjusted sharap ratio, Treynor ratio, adjusted Jenson and alpha indices. The results of his findings showed that fund size and fund performance has positive and significant effect on each other. But they also documented that fund size greatly affect the performance of funds. He also viewed that the impact of funds characteristics on fund performance and also noticed that various funds flows have different kinds of association with funds return. The study reported that fund size have positive and significant relationship with fund performance and fund that the study asserted that age of the fund is very well in affecting the fund performance.

Goetzemann et al. (2003) have investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds. They further explored that fund age and fund size are also very important which affect the risk adjusted performance of fund positively but found that fund liquidity are negatively affect the fund performance. They also enlightened the mutual funds features and other factors and expressed that most of the factors are insignificant. He found in their study there is a positive correlation between the size and fund performance. They contend that for a better performance size of funds is essential. The study reported that fund size have positive and significant relationship with fund performance and fund that the study asserted that age of the fund is very well in affecting the fund performance. evaluated the relationship between the determinants of funds and its performance and found that open ended funds have certain determinants i.e. expense ratio, fund age , management fee, cash flow, liquidity and fund size which effect the performance of fund the study evidenced that expense ratio has positive significant effect on the fund performance. The study also evidenced that fund age and size are also very vital which affect the risk adjusted performance of fund positively but found that liquidity negatively affect the performance.

Harris et al. (2003) examined the link between the elements of funds and its performance and found that open ended funds have definite factors i.e. management fee, fund age, expense ratio, cash flow, fund size and liquidity which influence the performance of fund. They examined that the impact of funds features on fund performance and found that various funds flows have different kinds of relationship with funds outcome. They sated that the fund have a relatively positive relationship the performance of mutual funds and the study also suggest that age and maturity of

fund is also very important and predicting the fund performance. He also viewed that the impact of funds characteristics on fund performance and also noticed that various funds flows have different kinds of association with funds return. The study reported that fund size have positive and significant relationship with fund performance and fund that the study asserted that age of the fund is very well in affecting the fund performance. They also investigated that the relationship between various funds determinants and fund performance and stated that fund age and size are vital determinants of the funds which influence the risk adjusted performance of fund. Similarly, they examined that the mutual funds features and other factors and expressed that most of the factors are insignificant. He found in their study there is a positive correlation between the size and fund performance. They also reported that there are statistically negative associations between funds liquidity and fund performance.

Patton et al. (2013) stated that fund flow elements affect the risk adjusted performance. They show that some funds structures have different sorts of significance on the funds' performance. They claimed that fund age has also substantial effect on the performance of funds. They projected that liquidity is adversely linked with fund performance. They confined that fund flow determinants also affect the risk adjusted performance of funds. They studied that different funds characteristics have different types of effect on the performance of funds. They contend that for a better performance size of funds is essential. They argued that fund age has also significant effect on the fund performance. They examine and suggested that liquidity is adversely related with performance of funds. They analyzed the association of fund performance and fund determinants and recorded that open ended mutual funds have certain determinants such as expense ratio, fund age, management

fee, cash flow, liquidity and the size of fund which influence the performance fund the study evidenced that expense ratio has also positive and significant impact on the performance of fund. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds. They further explored that fund age and fund size are also very important which affect the risk adjusted performance of fund positively but found that fund liquidity are negatively affect the fund performance. They contend that for a better performance size of funds is essential. The study reported that fund size have positive and significant relationship with fund performance and fund that the study asserted that age of the fund is very well in affecting the fund performance. They argued that fund age has also significant effect on the fund performance.

Taylor (2015) recognized that determinants fund flow has an impact on the risk adjusted performance. They perceived that different types of effect on the performance of fund are affected by different mutual funds factors. They studied that funds size is vigorous for funds superior performance. examined the selection strategy and the size factors of the mutual funds and they found that it is not important that one must have a large number of funds in their investment pools but he state that it is very important that you have those funds which are providing greater performance in the market. Furthermore he said that during the selection of funds the manager and the investors first have to gather information about all those funds which are proving high value of output and also to gather information about low performing funds as well so that they can easily avoid the buying of those funds in their investment loops. They investigated that the financial performance and the

relationship between these two funds are positive but insignificant in the average return of these two funds. They further explored that fund age and fund size are also very important which affect the risk adjusted performance of fund positively but found that fund liquidity are negatively affect the fund performance. They also predicted that liquidity is not positively associated with fund performance.

Petersen (2009) in a similar study they explored the correlation between funds' performance and various funds determinants and specified that the size of the funds and size are very important determinants of the funds which effect performance of fund. In their study they also described a negative relationship existence between funds' performance and liquidity of the fund. The study reported that fund size have positive and significant relationship with fund performance and fund that the study asserted that age of the fund is very well in affecting the fund performance. They show that fund age has also considerable effect on the funds' performance. They also claimed that there is a negative relationship between funds' performance and liquidity.

They also investigated that the relationship between various funds determinants and fund performance and stated that fund age and size are vital determinants of the funds which influence the risk adjusted performance of fund. Similarly, they examined that the mutual funds features and other factors and expressed that most of the factors are insignificant. He found in their study there is a positive correlation between the size and fund performance.

Becker and Vaughan (2001) evaluated mutual fund and stated that the size of funds has a significant impact on the expense ratio. The results of his findings showed that fund size and fund performance has positive and significant effect on each other. But they also documented that fund size greatly affect the performance of funds. In

addition they also claimed that the beta of fund size was lower than that of fund performance. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds. They confined that fund flow determinants also affect the risk adjusted performance of funds. They studied that different funds characteristics have different types of effect on the performance of funds. They contend that for a better performance size of funds is essential. They argued that fund age has also significant effect on the fund performance. They examine and suggested that liquidity is adversely related with performance of funds.

Molson (2003) in a similar study explored the funds and found that the size of the funds has strong relation and impact on the expense ratio. Their study defined a positive connection between expense ratio of funds and the size of the funds. The results of his findings showed that fund size and fund performance has positive and significant effect on each other. But they also documented that fund size greatly affect the performance of funds. In addition they also claimed that the beta of fund size was lower than that of fund performance. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds.

Tang (2007) documented that factors of fund flow has an effect on the performance of funds. They found that dissimilar sorts of effect on the enactment of fund are affected by different mutual funds influences. They said that a positive

relationship is exist between the size and funds expense ratio. They also confined fund performance using multifactor models and fond that Capital Assets Pricing Model (CAPM) can be a better predictor model as compare to the other models and traditional ratios. The study found that the expense ratio and fund cash flow can positively affect the fund performance. They recommended that fund age has also effect on the performance of fund. evaluated the relationship between the determinants of funds and its performance and found that open ended funds have certain determinants i.e. expense ratio, fund age , management fee, cash flow, liquidity and fund size which effect the performance of fund the study evidenced that expense ratio has positive significant effect on the fund performance.

Zera et al. (2007) asserted in their study and found that there is a positive relation in the size of fund and the expense ratio and also there is many other factors which affecting the performance of mutual funds. They supposed that an optimistic affiliation between funds expense ratio and the size of the funds. They also documented that a large numbers of factors affecting mutual funds' performance. They viewed that factors affecting mutual fund performance can be divided such as fund factors like fund size, expense ratio, fund style, fund age, fund fees and loads, fund flows and others factors related to fund family i.e. fund family size and management structure of the fund etc. similarly mutual fund manager as managerial tenure, experience and managerial education. Factors related to country's economic and financial development and country's border or geography in case of international fund etc, and also connected with the environment that affect mutual fund or where mutual funds operates such as economic and legal environment.

In a similar kind of study Gorman (1991) enlightened the mutual funds features and other factors and expressed that most of the factors are insignificant. He

found in their study there is a positive correlation between the size and fund performance. They studied that funds size is vigorous for funds better uplifting and performance. They recommended that fund age has also effect on the performance of fund. They analyzed the relationship between the timing selection abilities and fund selection abilities. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds. They asserted that the fund flow determinants effect the fund ability and times selection. They argued that fund age has also significant effect on the fund performance.

Grinblatt (1994) documented in their research study that a linear relation is exist in the fund performance and age of the fund and also the size of the fund.

Peterson et al. (2001) in their study explained that the size of the funds has impact on the expense ratio and this impact is positive in nature. They show that fund age has also considerable effect on the funds' performance. They also claimed that there is a negative relationship between funds' performance and liquidity. They studied that funds size is vigorous for funds better uplifting and performance. They recommended that fund age has also effect on the performance of fund. They analyzed the relationship between the timing selection abilities and fund selection abilities. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds. They asserted that the fund flow determinants effect the fund ability and

times selection. They argued that fund age has also significant effect on the fund performance.

Sirri and Tufano (1998) examined funds' performance and found that the media coverage promotion of funds information through media and advertisement play a vital and positive role in the performance of mutual funds. They also confined fund performance using multifactor models and fond that Capital Assets Pricing Model (CAPM) can be a better predictor model as compare to the other models and traditional ratios. The study found that the expense ratio and fund cash flow can positively affect the fund performance. They recommended that fund age has also effect on the performance of fund. evaluated the relationship between the determinants of funds and its performance and found that open ended funds have certain determinants i.e. expense ratio, fund age , management fee, cash flow, liquidity and fund size which effect the performance of fund the study evidenced that expense ratio has positive significant effect on the fund performance.

Reute Zitizewitz (2006) inspected funds' performance and institute that the media coverage advertising of funds material over media play an energetic and constructive role in the mutual funds' performance. Vanitha et al. (2011) studied the Malaysian mutual fund and fund size for the period of March 2001 to December 2005. They analyzed the performance of funds with using of adjusted sharap ratio, Treynor ratio, adjusted Jenson and alpha indices. The results of his findings showed that fund size and fund performance has positive and significant effect on each other. But they also documented that fund size greatly affect the performance of funds. In addition they also claimed that the beta of fund size was lower than that of fund performance. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market

operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds.

Barber et al. (2005) reviewed performance of funds and state that the advertising of funds material over media is very important and it has a positive on the performance of mutual funds. They documented that fund flow determinants also affect the risk adjusted performance of funds. They demonstrated that different funds characteristics have different types of effect on the performance of funds. They contend that for a better performance size of funds is essential. They argued that fund age has also significant effect on the fund performance. They examine and suggested that liquidity is adversely related with performance of funds. They analyzed the association of fund performance and fund determinants and recorded that open ended mutual funds have certain determinants such as expense ratio, fund age, management fee, cash flow, liquidity and the size of fund which influence the performance fund the study evidenced that expense ratio has also positive and significant impact on the performance of fund. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds. They further explored that fund age and fund size are also very important which affect the risk adjusted performance of fund positively but found that fund liquidity are negatively affect the fund performance. They contend that for a better performance size of funds is essential. The study reported that fund size have positive and significant relationship with fund performance and fund that

the study asserted that age of the fund is very well in affecting the fund performance. They argued that fund age has also significant effect on the fund performance.

Capon et al. (1996) documented funds and studied factors like media attention and promotion of funds through different sources of media. Different types of media sources were thoroughly analyzed and hence it was argue that these media channels are play very supportive role in the buying and selling of funds and also the transaction of these funds goes to boom in the time of strong promotion. The results of his findings showed that fund size and fund performance has positive and significant effect on each other. But they also documented that fund size greatly affect the performance of funds. In addition they also claimed that the beta of fund size was lower than that of fund performance. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds.

They documented that fund flow determinants impact the risk adjusted performance. They observed that different types of effect on the performance of fund are caused by different factors. They studied that funds size is vigorous for funds better uplifting and performance. They also confined fund performance using multifactor models and fond that Capital Assets Pricing Model (CAPM) can be a better predictor model as compare to the other models and traditional ratios. The study found that the expense ratio and fund cash flow can positively affect the fund performance. They recommended that fund age has also effect on the performance of fund. evaluated the relationship between the determinants of funds and its performance and found that open ended funds have certain determinants i.e. expense

ratio, fund age , management fee, cash flow, liquidity and fund size which effect the performance of fund the study evidenced that expense ratio has positive significant effect on the fund performance. The study also evidenced that fund age and size are also very vital which affect the risk adjusted performance of fund positively but found that liquidity negatively affect the performance.

Guercio and Tkac (2002) recognized funds and studied influences like attention of print and electronic media in the specified areas and preferment of funds through media. Different kinds of media springs were carefully examined and henceforth it was debate that in the selling and buying trading of funds get strengthen when there is a strong back of media behind the funds.

Elton et al. (2003) acknowledged funds and considered effects like attention of electronic and print media and promotion of information regarding funds timely. Several kinds of supportive pillars of media were studied sensibly inspected.

They found that buy and sell of funds is also an important aspects of mutual funds, they state that as their will be a transparent and easily available for investors and managers of different funds there will be a comprehensive performance of funds in response of these factors.

Smith (1978) evaluated funds and state that that trading of funds is also an significant aspects of mutual funds, they found that if there will be easily access to the information of different fund for managers investors there will be a wide-ranging positive response towards fund promotion and performance in retort of these influences. Goriaer et.al (2002) concluded that the mutual funds' performance is strongly relevancy in the size and age of the funds, those funds which injected early to the market with the passage of time they got maturity and hence they provide a

superior performance as compared to those funds which later on injected to the market.

Chevalier and Ellison (1997) determined that the performance of funds is powerful relevancy in the age and size of funds, those funds which inserted to the market in early ages with the spending of time and period they became mature and hereafter they deliver a greater performance as linked to those funds which injected late to the fund market. Spitz (1970) decided that the funds' performance is has an adverse relationship both positive and negative with the age and size factors of the funds, the funds which are lately enter to the market got momentum very late as compared to those which enter to the market in early stages and thus they got momentum with slowly with time passage. Harless and Peterson (1998) analyzed the funds and hence found that the funds' performance is has a positive linked with the fund size, the funds which are latterly arrive to the marketplace got energy very late than to those which arrive to the marketplace in initial phases. So time factors is very important in the performance of the funds and their selection.

Woerheide (1982) examined the selection strategy and the size factors of the mutual funds and they found that it is not important that one must have a large number of funds in their investment pools but he state that it is very important that you have those funds which are providing greater performance in the market. Furthermore he said that during the selection of funds the manager and the investors first have to gather information about all those funds which are proving high value of output and also to gather information about low performing funds as well so that they can easily avoid the buying of those funds in their investment loops. In a similar study Ippolite (1992) scrutinized the collection strategy and the size influences of the mutual funds and they initiate that it is not significant that the individual must have a

big number of funds in their venture pools but he suggested that it is very significant that you select the funds which are providing better performance in the marketplace.

They documented that fund flow determinants impact the risk adjusted performance. They observed that different types of effect on the performance of fund are caused by different factors. They studied that funds size is vigorous for funds better uplifting and performance. They also confined fund performance using multifactor models and fond that Capital Assets Pricing Model (CAPM) can be a better predictor model as compare to the other models and traditional ratios. The study found that the expense ratio and fund cash flow can positively affect the fund performance. They recommended that fund age has also effect on the performance of fund. evaluated the relationship between the determinants of funds and its performance and found that open ended funds have certain determinants i.e. expense ratio, fund age , management fee, cash flow, liquidity and fund size which effect the performance of fund the study evidenced that expense ratio has positive significant effect on the fund performance. The study also evidenced that fund age and size are also very vital which affect the risk adjusted performance of fund positively but found that liquidity negatively affect the performance. He also he said that throughout the assortment of funds the investors first have to wrinkle material and gather information about low performing funds and about those funds which are outperforming as well thus that they will easily select those funds which are averagely performing well. The previous study of his findings showed that fund size and fund performance has positive and significant effect on each other. But they also documented that fund size greatly affect the performance of funds. In addition they also claimed that the beta of fund size was lower than that of fund performance. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of

these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds.

Nanda et al. (2003) documented in their study that to study the fund inflows and the funds outflows of the funds and they found that there is variation in the market regarding the inflows and outflows of different funds. And they suggest that get high inflow from the market the investors has to be very vagrant in their decision about funds selection. For abnormal inflows of funds the investors must have to choose those funds which currently outperforming in the market. In a similar study Cashmanet et. al. (2006) observed funds' performance and found for irregular positive inflows of funds the shareholders duty to purchase those funds which presently outclassing in the market.

Berkowitz and Ketowitz (2000) in their study examined the funds flows and state that the flow of funds is high in early days of funds injection to the market and similarly this has an influential impact on the flow of mutual funds. In a similar sort of study the Edwards and Zhang (1998) also described the flow of funds by considering so many factors for this purpose and hence they came to the statement that there also has a positive impact of mutual funds in the last days as well. The told about the importance of last 5 to 8 months.

Santini and Aber (1998) termed the flow of funds by seeing different determinants, they found that there is mix sort of impact of funds in both the past days and the preceding time as well. The results of his findings showed that fund size and fund performance has positive and significant effect on each other. But they also documented that fund size greatly affect the performance of funds. In addition they also claimed that the beta of fund size was lower than that of fund performance.

Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds.

Shuetal (2002) studied the relationship of net cash flow and the volatility. They found that most of the managers and the investors are risk sensitive they avoid taking risk in their investment decision. They argue the old quotation that when their will risk their will be high return. Afza and Rauf (2010) also discussed the factors and the influences which strongly affect the fund flow in the market. They state that it varies area to area in some area where the information is easily available and due the availability of information technology their the decision making is a bit easy and beneficial compared to the areas where there is a lack of information and also of the technology as well.

In a similar study Nazir and Nawaz (2010) also labelled the flow of moneys by seeing different features for the determination and later they came to the declaration that choice making is a little easy and helpful than those regions where there is a absence of information and absence of the information technology as well. Tripathi et al. (2011) investigated the Malaysian mutual fund and fund size for the period of March 2001 to December 2005. They analyzed the performance of funds with using of adjusted sharp ratio, Treynor ratio, adjusted Jenson and alpha indices. The results of his findings showed that fund size and fund performance has positive and significant effect on each other. But they also documented that fund size greatly affect the performance of funds. In addition they also claimed that the beta of fund size was lower than that of fund performance. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was

lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds.

Carhart (1997) analyzed the funds by different models like CAPM and other and hence originate that the performance of mutual funds is has a relation with the fund age and size, so the size and time factors is very significant in the performance and the decision of selection of funds from the market. They state that it varies area to area in some area where the information is easily available and due the availability of information technology their the decision making is a bit easy and beneficial compared to the areas where there is a lack of information and also of the technology as well. They analyzed that various funds having distinguished models like capital assets pricing model and others related parameter of mutual funds. He further explained that funds for understanding its timing and selection abilities. The study that reported that funds most often have good timing abilities and they are also having good selection abilities as well. Rockinger (1996) documented that the those funds which are in star category are imparting a much better performance and net cash flows compared to other funds in the family. Soderlind et al. (2000) acknowledged that the star funds in family are providing better performance than those funds which are relatively low performing.

They documented that fund flow determinants impact the risk adjusted performance. They observed that different types of effect on the performance of fund are caused by different factors. They studied that funds size is vigorous for funds better uplifting and performance. They also confined fund performance using multifactor models and fond that Capital Assets Pricing Model (CAPM) can be a better predictor model as compare to the other models and traditional ratios. The study

found that the expense ratio and fund cash flow can positively affect the fund performance. They recommended that fund age has also effect on the performance of fund. evaluated the relationship between the determinants of funds and its performance and found that open ended funds have certain determinants i.e. expense ratio, fund age , management fee, cash flow, liquidity and fund size which effect the performance of fund the study evidenced that expense ratio has positive significant effect on the fund performance. The study also evidenced that fund age and size are also very vital which affect the risk adjusted performance of fund positively but found that liquidity negatively affect the performance.

Wermers et al. (2000) scrutinized the assortment strategy and the size aspects of the mutual funds and they state the number of funds in the selection is also important but is also important to keep those funds as well in the loops which are out performing in the market. Thus the ultimate output will be relatively high and persistent. Besides this they state that throughout the selection of funds the investors first have to fold information about out performing funds and also to fold information about those funds which are low performing as well so that they can easily choose those funds which are beneficial for the investment in future.

Duca (2005) examined the lower load of mutual and there transfer of asset cost and also studied the risk associated with and cost and income of the mutual funds. They state that diversification also important in considering the investment decisions. Their study mainly focused the United States. Becker and Vaughan (2001) documented that a large numbers of factors affecting mutual funds' performance. They viewed that factors affecting mutual fund performance can be divided such as fund factors like fund size, expense ratio, fund style, fund age, fund fees and loads, fund flows and others factors related to fund family i.e. fund family size and

management structure of the fund etc. similarly mutual fund manager as managerial tenure, experience and managerial education. Factors related to country's economic and financial development and country's border or geography in case of international fund etc, and also connected with the environment that affect mutual fund or where mutual funds operates such as economic and legal environment. They investigated that factors which affect mutual fund performance are usually the determinants of mutual fund flows, as performance is laterally the major determinant of funds flow.

Molson (2005) examined that the fund size has statistically positive and significant impact on the funds expense ratio the same was measured by Tang (2007). They documented that the relationship between mutual fund size and performance has been widely studied in mutual fund literature. Glenn (2004) observed the cost of asset transfer and suggested that, the divergence also important in seeing the investment assessments. Their study largely concentrated the lower income households of United States.

In a similar study Reid and Miller (1999) also suggested that due the lowering cost of asset transferring the ownership of there is a remarkable increase in the number of ownership transfer in US markets. They analyzed the relationship between the timing selection abilities and fund selection abilities. They asserted that the fund flow determinants effect the fund ability and times selection. The timing and selection abilities have been discussed by various researchers. Adam (2015) comparatively analyzed equity and balanced funds for their timing and selection abilities and found that equity funds are prominent funds to outperform balanced funds in term of their timing and selection abilities. The results of his findings showed that fund size and fund performance has positive and significant effect on each other. But they also documented that fund size greatly affect the performance of funds. In addition they

also claimed that the beta of fund size was lower than that of fund performance. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds.

Dukes and Davis (2006) examined the mutual funds and suggested that when the risk is lower in specific funds they attract the investors and the trading of funds is in peak in such situation and funds, along with other factors like size, age of the fund, the structure and availability of funds in the market, the TORs for purchasing the funds are play an important role on the mind and decision making of manager and other investors willing to invest in the market. In a similar research study George (2001) also recommended that along with other features like age, availability and the fund structure in the market, are influences on the investors to purchasing those funds which are having easy process and other related tools for selecting and investing.

2.5 Funds Timing and Selection Ability of Mutual Funds

Naveed (2008) analyzed funds for understanding its timing and selection abilities. They also investigated that equity fund using multi factor models to predict the mutual fund performance. The study evidence that majority of the portfolio model significantly affect the mutual fund performance. The same kinds of finding cannot be reported developing countries. The study reported that the funds most often have good timing abilities and they are also having good selection abilities. They also investigated that equity fund using multi factor models to predict the mutual fund performance. The study evidence that majority of the portfolio model significantly affect the mutual fund performance. The same kinds of finding cannot be reported developing countries. The study used conditional Capital Assets Pricing Model

(CAPM), Fama franch 3- factor and car hart. The study reported that majority of the portfolio intercepts are significant which determine the better performance of these portfolio. He analyzed the results of very related study of literature to that of the concerned with past researchers who also argued that funds which have not well timing and selection abilities are not survive as long as possible. The also timing and selection abilities have been discussed by various others researchers.

Geenbatt (2008) also evaluated and find performance using multifactor models and fond that Capital Assets Pricing Model (CAPM) can be a better predictor model as compare to the other models and traditional ratios. The study found that the expense ratio and fund cash flow can positively affect the fund performance. They also investigated that equity fund using multi factor models to predict the mutual fund performance. The study evidence that majority of the portfolio model significantly affect the mutual fund performance. The same kinds of finding cannot be reported developing countries. He analyzed the results of very related study of literature to that of the concerned with past researchers who also argued that funds which have not well timing and selection abilities are not survive as long as possible. The also timing and selection abilities have been discussed by various others researchers. Jan (2016) comparatively examined the equity and balanced funds for their timing and selection abilities and found that equity funds are prominent funds to outperform balanced funds with respect to their timing and selection abilities.

EGB (2004) also conducted study to analyze the funds' performance. The study analyzed funds for their timing and selection abilities. The study analyzed these funds and using correlation and regression. The study found that funds that majority of the funds do not have enough timing abilities. The study also evidenced that most of the funds also do not have good selection abilities as well. They also

viewed that the investor of mutual fund are buying the units of those funds which having more and more timing and selection abilities. They also investigated that equity fund using multi factor models to predict the mutual fund performance. The study evidence that majority of the portfolio model significantly affect the mutual fund performance. The same kinds of finding cannot be reported developing countries. They further explained that funds for understanding its risk adjusted performance, their timing and selection abilities. They explored that the study of mutual fund to forecast their timing and selection abilities. The study documented that almost all firms have good and enough timing and selection abilities. But they have not sufficient to outperform the overall market. Further, they were investigated that the overall performance of mutual fund was enough and sufficient.

Persson, et.al (2005) also analyzed funds for knowing their timing and selection abilities and found that majority of the Malysian firms do not have very good timing abilities and selection abilities. The study found that all these funds have good performance in the mutual fund industry but do not perform well as compare to the market. He analyzed the results of very related study of literature to that of the concerned with past researchers who also argued that funds which have not well timing and selection abilities are not survive as long as possible. The also timing and selection abilities have been discussed by various others researchers. They investigated that funds understanding and its timing and selection abilities. The study explored that funds most often have as good as timing and selection abilities and they are also having good selection abilities. Similarly, they claimed that the results of the study are showing that equity fund were greater than income fund. In addition, they summarized that the whole of average return was good and enough of the timing and selection abilities of funds. They also investigated that equity fund using multi factor

models to predict the mutual fund performance. The study evidence that majority of the portfolio model significantly affect the mutual fund performance. The same kinds of finding cannot be reported developing countries.

Kon (1983) conducted a study and also analyzed funds for knowing their timing and selection abilities and found that majority of the US firms do not have very good timing abilities and selection abilities. The study found that all these funds have good performance in the mutual fund industry but do not perform well as compare to the market. The results of his findings showed that fund size and fund performance has positive and significant effect on each other. But they also documented that fund size greatly affect the performance of funds. In addition they also claimed that the beta of fund size was lower than that of fund performance. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They conducted the study to examine the performance of funds. The study investigated that fund for their good timing and selections abilities. The study summarized that these found using simple regression and correlation. The study documented that nearly all funds have not the required timing abilities and selection. He also evidenced that various level of funds have not well selection abilities and timing.

Treynor and Mazuy (1996) analyzed funds for understanding its risk adjusted performance, their timing and selection abilities. The study analyzed these funds to predict their timing and selection abilities. The studies found that majority of funds have good timing and selection abilities. But they are not enough to outperform the overall market. In addition they also claimed that the beta of fund size was lower than that of fund performance. Similarly, the degree of diversification of fund size was

high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds. The results of his findings showed that fund size and fund performance has positive and significant effect on each other. But they also documented that fund size greatly affect the performance of funds. In addition they also claimed that the beta of fund size was lower than that of fund performance. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations.

Henriksson and Merton (1981) examined the funds for knowing their selection and timing abilities. The study explored different funds to forecast their selection and timing abilities. They study concluded that most of the funds are neutral in nature in respect of timing and selection abilities of these fund. They investigated that funds for using their timing and selection abilities are founding that majority of the Malaysian firms has not a smart and good timing abilities and selection abilities. The study found that all these funds have fund performance in the mutual fund industry and does not perform well as compare to the market. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds. They analyzed the performance of funds with using of adjusted sharap ratio, Treynor ratio, adjusted Jenson and alpha indices. The results of his findings showed that fund size and fund performance has positive and significant effect on each other. But they also documented that fund size greatly affect the performance of funds.

In similar study Chang and Lewellen (1984) led a research study to investigate the funds' performance and to also know the impact of timing abilities and selection abilities of these funds. They both in their study determined that maximum level the performance of funds are impartial keeping the two factors timing abilities and selection abilities of mutual fund. They analyzed the relationship between the timing selection abilities and fund selection abilities. They asserted that the fund flow determinants effect the fund ability and times selection. They evidenced that various funds characteristics have affected types of effect on the funds timing and selection abilities. They also argued that funds timing and abilities is vital for fund better performance. So, some timing abilities and selection abilities greatly affect the performance of fund. They argued that fund age has also significant effect on fund performance. They predicted that performance of fund timing and selection abilities is negatively associated with fund performance. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds.

In very related studies of literature Ferson and Schadt (1996) have discussed the funds and their finding are very much parallel in nature to all those former researchers who claimed that majority of the funds are having mixed selection and timing abilities in market. In addition they also claimed that the beta of fund size was lower than that of fund performance. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They conducted the study to examine the performance of funds. The study investigated that fund for their good timing and

selections abilities. The study summarized that these found using simple regression and correlation. They both in their study determined that maximum level the performance of funds are impartial keeping the two factors timing abilities and selection abilities of mutual fund. They analyzed the relationship between the timing selection abilities and fund selection abilities. They asserted that the fund flow determinants effect the fund ability and times selection. They evidenced that various funds characteristics have affected types of effect on the funds timing and selection abilities. The results of his findings showed that fund size and fund performance has positive and significant effect on each other. But they also documented that fund size greatly affect the performance of funds.

In similar studies Hassan et.al (2016) also documented results very similar to that of the previous researchers who argued that funds have do not well timing and selection abilities. The studies found that majority of funds have good timing and selection abilities. But they are not enough to outperform the overall market. In addition they also claimed that the beta of fund size was lower than that of fund performance. Similarly, the degree of diversification of fund size was high as compare to fund performance but the beta of these two funds was lower than that of market operations. They investigated that the financial performance and the relationship between these two funds are positive but insignificant in the average return of these two funds. The results of his findings showed that fund size and fund performance has positive and significant effect on each other. But they also documented that fund size greatly affect the performance of funds. In addition they also claimed that the beta of fund size was lower than that of fund performance. They analyzed the relationship between the timing selection abilities and fund selection abilities. They asserted that the fund flow determinants effect the fund ability and

times selection. The timing and selection abilities have been discussed by various researchers. Adam (2015) comparatively analyzed equity and balanced funds for their timing and selection abilities and found that equity funds are prominent funds to outperform balanced funds in term of their timing and selection abilities. The study suggested that investors buy units of those funds having more timing and selection abilities.

Henriksson (1984) analyzed mutual funds for understanding the important aspects of funds one its timing abilities and second is the selection abilities. The research study stated that the funds most often are having good selection abilities and timing abilities. The managers also keep keen eye on these two factors while planning for investment strategy. They also documented that fund flow determinants impact the risk adjusted performance. They observed that different types of effect on the performance of fund are caused by different factors. They studied that funds size is vigorous for funds better uplifting and performance. They also confined fund performance using multifactor models and fond that Capital Assets Pricing Model (CAPM) can be a better predictor model as compare to the other models and traditional ratios. The study found that the expense ratio and fund cash flow can positively affect the fund performance. They recommended that fund age has also effect on the performance of fund. evaluated the relationship between the determinants of funds and its performance and found that open ended funds have certain determinants i.e. expense ratio, fund age , management fee, cash flow, liquidity and fund size which effect the performance of fund the study evidenced that expense ratio has positive significant effect on the fund performance. The study also evidenced that fund age and size are also very vital which affect the risk adjusted

performance of fund positively but found that liquidity negatively affect the performance.

Veit and Cheney (1982) also conducted study to analyze the funds' performance. The study analyzed funds for their timing and selection abilities. The study analyzed these funds and using correlation and regression. The study funds that majority of the funds do not have enough timing abilities. The study also evidenced that most of the funds also do not have good selection abilities as well. They also evaluated the Pakistan mutual fund performance using traditional measure and Capital Assets Pricing Model (CAPM). The study found that while using traditional sharp ratio, the funds do not mostly outperform the market and also predicted that fund expense ratio and size have positive affect on the fund's risk adjusted performance. They also investigated that equity fund using multi factor models to predict the mutual fund performance. The study evidence that majority of the portfolio model significantly affect the mutual fund performance. The same kinds of finding cannot be reported developing countries. The study used conditional Capital Assets Pricing Model (CAPM), Fama franch 3- factor and car hart. The study reported that majority of the portfolio intercepts are significant which determine the better performance of these portfolio.

2.6 Performance Measures and Models for Stocks & Funds

Becker and Vaughan (2001) documented that a large numbers of factors affecting mutual funds' performance. They viewed that factors affecting mutual fund performance can be divided such as fund factors like fund size, expense ratio, fund style, fund age, fund fees and loads, fund flows and others factors related to fund family i.e. fund family size and management structure of the fund etc. similarly

mutual fund manager as managerial tenure, experience and managerial education. Factors related to country's economic and financial development and country's border or geography in case of international fund etc, and also connected with the environment that affect mutual fund or where mutual funds operates such as economic and legal environment. They investigated that factors which affect mutual fund performance are usually the determinants of mutual fund flows, as performance is laterally the major determinant of funds flow.

Molson (2005) examined that the fund size has statistically positive and significant impact on the funds expense ratio the same was measured by Tang (2007). They documented that the relationship between mutual fund size and performance has been widely studied in mutual fund literature. The study evidence that majority of the portfolio model significantly affect the mutual fund performance. The same kinds of finding cannot be reported developing countries. The study used conditional Capital Assets Pricing Model (CAPM), Fama franch 3- factor and car hart. The study reported that majority of the portfolio intercepts are significant which determine the better performance of these portfolio

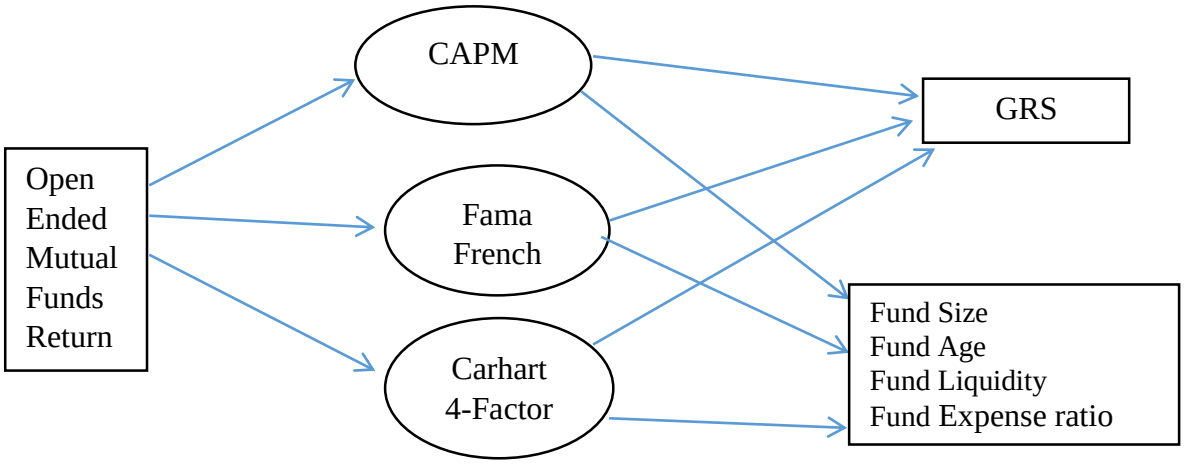
Rehman and Baloch (2006) evaluated analyzed the must performance using Capital Assets Pricing Model (CAPM), and Fama French -3 factor models and used the data of 100 open ended Pakistan mutual fund. The study evidenced that both model predicts and explain the fund performance. But Capital Assets Pricing Model (CAPM) was fond a better model to predict and explain the mutual fund performance. The study suggested that other sophisticated models can also be tested in evaluating the mutual performance in Pakistan. Afza and Raif (2009) also evaluated the Pakistan mutual fund performance using traditional measure and Capital Assets Pricing Model (CAPM). The study found that while using traditional sharp ratio, the funds do not

mostly outperform the market and also predicted that fund expense ratio and size have positive affect on the fund's risk adjusted performance.

Qtton and Bams (2002) analyze equity fund using multi factor models to predict the mutual fund performance. The study evidence that majority of the portfolio model significantly affect the mutual fund performance. The same kinds of finding cannot be reported developing countries. The study used conditional Capital Assets Pricing Model (CAPM), Fama franch 3- factor and car hart. The study reported that majority of the portfolio intercepts are significant which determine the better performance of these portfolio.

Geenbatt (2008) also evaluated and find performance using multifactor models and fond that Capital Assets Pricing Model (CAPM) can be a better predictor model as compare to the other models and traditional ratios. The study found that the expense ratio and fund cash flow can positively affect the fund performance. The study evidence that majority of the portfolio model significantly affect the mutual fund performance. The same kinds of finding cannot be reported developing countries. The study used conditional Capital Assets Pricing Model (CAPM), Fama franch 3- factor and car hart. The study reported that majority of the portfolio intercepts are significant which determine the better performance of these portfolio.

2.7 Theoretical Framework



2.8 Hypotheses of the Study

2.8.1 Models Testing

H0: All three models i.e. CAPM, Fama French-3 factor and Carhart-4 factor models do not equally predict and explain mutual fund performance in Pakistan.

H1: All three models i.e. CAPM, Fama French-3 factor and Carhart-4 factor models equally predict and explain mutual fund performance in Pakistan.

2.8.2 Funds Factors

H1: Funds expense ratio has significant positive effect.

H2: Funds size has significant positive effect on mutual funds risk adjusted return.

H3: Funds age has positive significant effect on the risk adjusted performance of funds.

H4: Funds liquidity has negative significant effect on funds return.

CHAPTER 3

Research Methodology

This chapter consists of data collection methods, population, sampling procedures and statistical techniques used for the data analysis of the study.

3.1 Type of Research

Actually the study in hand is a quantitative research, so called applied research as the methodology applied by other previous researchers have been tested in this research, quantitatively analyzed the data of the Mutual funds traded on MUFAP Pakistan. Sekra (2003) argued that applied research is conducted to restore the issue confronted to researchers and academician.

The current research is a type of cor-relational study as the funds returns and market returns relationships have been tested and more ever the funds factors relationships with risk adjusted return.

3.2 Research Design

Research design tells about the research plan, research design means that how the study data is collected, analyzed and interpreted. This study has been conducted to test hypothesis as the purpose. The study quantitatively analyzed data which confirm the type of research as quantitative one. The study used random sampling, so it confirm a stated mechanism of sampling. The study used various variables and

models which signified that pre-used variables have been tested. For data analysis various models like CAPM, Fama French, Carhart and correlation and regression have been used, which signified the arguments for data analysis.

The study reviewed the literature deeply and comprehensively and got the various variables for the study.

3.3 Population and Sampling of the Study

Population represented the entire group available to the observer. Simply the entire units available for any study is called population (Sekaran, 2003). This study in hand collected data from open ended mutual funds. The population of the current study is all open ended mutual funds are being traded on MUFAP Pakistan. The study analyzed portfolio and models, during the generating of portfolio dropped those funds, which were no more existed on MUFAP. For knowing the effects of various factors on the risk adjusted performance, the study analyzed 30 Mutual fund factors on their adjusted performance. All these 30 funds were randomly collected having continues values for various funds factors.

3.4 Sources of Data Collection

The data of this research was collected for the period 2010 to 2016, the data was collected for the model testing and flow determinants. The data was collected from the MUFAP Pakistan site whereas for the understanding the effect of fund factors on fund performance, the data was collected from the annual reports of different Mutual funds. For the construction of models and portfolios the study used risk free rate collected from SBP treasury bills rates on monthly basis. The study collected stock returns by using daily stock prices making stock returns and

converting them to monthly basis. The study also collected market returns by using the value of daily index converting them into monthly index returns.

SMB was calculated as big and small where six portfolios BL, BM, BH, SL, SM and SH were generated, then formally SMB was calculated as (SL+SM+SH)/3 – (BL+BM+BH)/3, and HML was calculated based on low, medium and high book to market ratio and HML was calculated as (SH+BH)/2 – (SL+BL)/2.

Momentum was calculated on the 11th month cumulative returns for each stock, and momentum returns was formed as the different between average returns of the top 30% minus bottom 30% stock returns. Then calculated 10 portfolio from P1 to P10. P1 portfolio contains the lowest returns funds and the sequence goes like this. After construction of the 10 portfolios various models i.e. CAPM, Fama French 3-Factors, and Carhart 4- Factors were tested, and GRS was applied to predict the better model.

The risk adjusted performance were generated through these models and then risk adjusted performance was regressed on various fund factors i.e. fund size, fund age and expense ratio and fund liquidity.

3.5 Data Analysis Tools

The models for the analysis are CAPM, Fama French-3 factor, Carhart-4 factor models and GRS as described below:

3.5.1 CAPM Model

This model has been used by EGB (2004), Huiji andVerbeek (2005, and Rehman and Balooch (2016).

$$(Ri-Rf) = \alpha + \beta\,(Rm-Rf) + \varepsilon \ldots\ldots\ldots 1$$

Where (Ri- Rf) will show the kind of risk premium which will be associated with given stock and β (Rm- Rf) show the expected risk premium of the model CAPM, and α is the intercept.

3.5.2 Fama French 3-Factor Model

EGB (2004) and Huiji and Verbreek (2006) tested this model in their mutual fund performance evaluation studies.

$$(Ri\text{-}Rf) = \alpha + \beta 1\ (rm\text{-}rf) + \beta 2\ (SMB) + \beta 3\ (HML) + \varepsilon \ldots\ldots\ldots 2$$

Where (Ri-Rf) is showing actual risk premium on a given stock, SMB showing the size factor. It is the difference in return on a portfolio that consists of small caps funds and those that contain large caps funds. HML showing the book to market factor also called value factor, which will be measured and calculated as the difference in return between a portfolio of high book to market stock and a portfolio of low book to market stocks, while α is the intercept.

3.5.3 Carhart 4-Factor Model

EGB (2004) used this model.

$$(Ri\text{-}Rf) = \alpha + \beta 1\ (rm\text{-}rf) + \beta 2\ (SMB) + \beta 3\ (HML) + \beta 4\ (MOM) + \varepsilon \ldots . 3$$

The first 3 factors will be calculates as in the above 3-factor model, however momentum factor will be calculated as momentum returns in each month as a difference between average returns of top 30% minus bottom 30% stock returns.

3.5.4 Gibbon Ross Shanken (GRS) Test

GRS will be applied to find the most suitable and validated model among the three models.

3.6 Measurement of Variables

3.6.1 Expense Ratio

The expense ratio is calculated by dividing the fund expense by NAV (Net Asset Value) of the fund. There are so many different types of expense which are involved in mutual funds. This is used and defined as the gross total expense divided by NAV in their by many researcher like EGB (2004), Haslem et al. (2008), Afza and Rauf (2009) and Rehman and Baloch (2016).

3.6.2 Liquidity

Turnover or liquidity ratio replicates the entire trading activities commenced by the mutual fund throughout a specified quarter. This is defined and used by Afza and Rauf (2009) and also by Rehman and Baloch (2016). This is calculated annually as the total log mutual funds overall cash. Henceforth, if vigorous management rises return the turnover ratio / variable will have a significantly positive link with the mutual fund's return.

3.6.3 Funds Size

This is the grand total amount of investors overall investment for specific period of time under consideration. This is used by Rehman and Baloch (2016 in their research study which are based on the Pakistani mutual funds industry and also used by Afza and Rauf (2009) as well.

3.6.4 Fund Age

This is actually based on that how many numbers of funds operational in the specific quarters. Also its represents the age means the number of years from their entrance to the market. This can be calculated the number of years and existence in

the market. Defined and used by Rehman and Baloch (2016 in their research study and also used by Otten and Bams (2002) as well.

CHAPTER 4

DATA ANALYSIS AND RESULTS DISCUSSION

This chapter shows the comprehensive performance analysis of the draft. All models and their results are analyzed using all three multi factor models and funds determinants.

4.1 Mutual Fund Performance Analysis by using CAPM

Table 4.1 CAPM

Portfolio	T value	P value	Intercept	R_square
P1	4.931	0.000	0.013	0.211
P2	3.675	0.000	0.017	0.234
P3	2.993	0.002	0.023	0.112
P4	3.290	0.001	0.031	0.158
P5	2.242	0.031	0.051	0.013
P6	4.029	0.000	0.011	0.223
P7	2.929	0.002	0.062	0.284
P8	10.565	0.000	0.055	0.334
P9	7.772	0.000	0.102	0.561
P10	2.602	0.004	0.211	0.487

The Table 4.1 shows the results of CAPM. The T-value of Portfolio 1 (P1) shows significant effect on the returns of funds in Portfolio 1. Similarly the P2 also shows significant t-value at 5% probability level, which means that it has also significant effect on the return of funds in P2. The P3 also showing significant probability value which predicts the significant effect of the market factor on the Portfolio 3 return, P4 also showing significant t-value at 5% probability level, determining the significant effect of the Rm-Rf (market factor) on the funds return. Likewise the other portfolios P5, P6, P7, P8, P9 and P10 are also having significant probability value at 5% probability level, which indicates that the market factor having a positive significant effect on these portfolio returns. Belagcem (2011) Afza and Rauf (2009) also presented in their research analysis findings that the market factors is significant and positive effect on the mutual fund return.

The intercept values in table 4.1, i.e. the intercept value of P1 is 0.013, P2 is 0.017, P3, P4 and P5 has intercept values of 0.02, 0.03, 0.05 respectively, these values of intercept demonstrate that the nearer the value of intercept closer to zero the better is the coherence of expected return and risk premium, which also indicated that those investors which want to earn higher returns from their fund investments they have to bear high risk associated with those returns, the higher they presume returns from their funds the higher they will have to take risk. Rehman and Baloch (2016) used this model in their research and similar sort of findings was reflected in their model interpretation.

4.2 Mutual Fund Performance Analysis by using Fama French 3 Factor model

Table 4.2 Fama French 3 Factor

Portfolio	Rm_Rf		SMB		HML		Intercept	R_square
	T.value	P.value	T.value	P.value	T.value	P.value		
P1	3.198	0.001	0.394	0.342	-2.125	0.045	0.023	0.288
P2	2.849	0.002	0.191	0.283	-1.927	0.057	0.041	0.290
P3	0.163	0.125	0.384	0.425	-1.945	0.055	0.050	0.214
P4	3.169	0.001	0.994	0.302	-0.603	0.212	0.024	0.211
P5	2.873	0.002	0.137	0.203	-1.451	0.091	0.052	0.222
P6	3.268	0.001	0.952	0.307	-1.663	0.083	0.053	0.266
P7	4.704	0.000	2.296	0.041	0.070	0.341	0.063	0.343
P8	4.833	0.000	2.048	0.048	0.327	0.131	0.101	0.365
P9	7.812	0.000	0.384	0.128	-0.315	0.142	0.134	0.637
P10	5.709	0.000	0.692	0.820	-0.608	0.114	0.388	0.628

In the above table 4.2 the t-values of Portfolios P1 and P2 showing significant effect of the market factor on these portfolios fund returns. And the portfolio P3 also showing T-value of 0.163 which indicates that there is an insignificant effect of the market factor on portfolio 3 returns at 5% probability level.

Likewise the portfolios from P4 to Portfolio P10 shows significant t-values at a 5% level of probability, which clearly means and indicate that these have also a significant effect on the return of funds in their respective portfolio. As these are showing significant probabilities and t-values which forecasts a positive and

significant effect of the market factor on the all those Portfolios return which has a t-value above than 2.

The size factor (SMB) of the Fama French 3- factor model, Portfolio 1 (P1) to Portfolio 6 (P6) showing the insignificant t-value at 5% probability level, which shows that size factor has insignificant effect on the return of the funds in these portfolios. While the Portfolio 7 (P7) and P8 showing significant t-values at 5% probability level, meaning that SMB the size factor has a significant effect on the return of funds in these two Portfolios. Gorman (1991), Hestal et.al (2009) also proved in their research findings that funds size SMB has a positive and significant effect on the return of mutual funds. However, P9 and P10 are again showing insignificant t-values which indicates that the size factors are having insignificant effect on the returns of funds and the last two portfolios of the table 4.2.

Similarly the HML (value factor) shows that P1 portfolio is having significant t value which means that the HML value factor has significant effect at 5% probability level on the returns of funds in the portfolio P1. However the portfolios P2, P3,P4, P5,P6,P7, P8, P9 and P10 all these portfolios shows insignificant t-values less than 2 at 5% probability level which shows that value factor has insignificant effect on the return of mutual funds in all these portfolios. Rehman and Baloch (2016), Karlsson and Persson (2005) has also used the same models and documented the likewise results. Similarly the table 4.2 intercept values in Fama French 3 factors model, the intercept value of P1, P2, P3, P4, P5 are 0.02, 0.04, 0.05, 0.02, and 0.05 respectively, these intercept-values of the models shows that the value of intercept closer to zero means that investor place expected return, for which they place risk accordingly. The rest of portfolios have higher intercepts which means that these portfolio are not properly managed in term of risk and expected return.

The R square values of the models show the explanatory power of the model and the changes cause by the portfolios. When the value of the R square will be higher, this will indicate higher will be the explanatory power of the model. Rehman and Baloch (2016) test the Fama French 3 factor model in their research and they also showed that parallel sort of findings was replicated in their model analysis.

4.3 Mutual Fund Performance Analysis by using Carhart 4-Factor Model

Table 4.3 Carhart 4-Factor

Portfolio	Rm_Rf		SMB		HML		MOM		Intercept	R_square
	T.value	P.value	T.value	P.value	T.value	P.value	T.value	P.value		
P1	3.746	0.000	0.175	0.213	2.921	0.000	2.115	0.046	0.021	0.358
P2	2.566	0.004	0.055	0.812	2.482	0.008	1.641	0.082	0.040	0.348
P3	3.032	0.001	0.098	0.918	2.888	0.002	2.266	0.041	0.047	0.288
P4	3.634	0.000	1.835	0.051	1.623	0.081	1.950	0.056	0.028	0.268
P5	2.739	0.003	0.186	0.201	1.422	0.092	0.466	0.131	0.053	0.227
P6	3.939	0.000	0.542	0.125	2.614	0.009	2.358	0.042	0.052	0.349
P7	4.960	0.000	2.171	0.045	0.403	0.136	1.070	0.199	0.064	0.353
P8	4.671	0.000	2.024	0.048	0.115	0.781	0.335	0.871	0.104	0.378
P9	6.767	0.000	0.558	0.123	0.492	0.185	1.474	0.221	0.143	0.648
P10	5.259	0.000	0.680	0.118	0.434	0.176	0.096	0.451	0.394	0.619

This table 4.3 shows the performance analysis of mutual funds by using Carhart model as for the market factors is concerns the portfolios from P1 to P10 all portfolios shows significant t value at 5% probability level which means that market factors has significant effect on the returns of all these portfolios. The SMB factor of portfolios P1, P2, P3, P4, P5, P6, P9 and P10, these portfolios having t-values insignificant at 5% probability factors which shows that size factor has insignificant effect on the returns of these portfolios, whereas P7 and P8 showing significant t-values as 5% probability level which means that P7 and P8 in these portfolios SMB the size factor has effect on the returns of funds and these two portfolios.

Likewise HML showing the value factor or value premium u can say this that P1, P2, P3 and P6 these portfolios show significant t-values at 5% probability level which means that value

factor has significant effect on the returns of the funds in these portfolios, whereas the portfolios P4, P5, P7, P8, P9 and P10 these portfolios shows insignificant t-values at 5% probability level which means that value factor has insignificant effect on the return of funds in these portfolios. Likewise if you look at the momentum factor the portfolios P1, P3 and P6 these portfolios shows significant t-values at 5% probability level which means that momentum factor has positive significant effect on the return of funds in these three portfolios while P2, P4, P5, P7, P8, P9 and P10 these portfolios showing insignificant betas or insignificant t-values at 5% probability level suggesting that momentum factor has insignificant returns of funds in these portfolios.

The intercept value of P1 is 0.02, P2 is 0.04 this intercept shows that the nearer the value of intercept closer to zero the better it is fitness of the model, which

means you know investors expect some returns for which they take risk, so the risk is associated with returns the higher will be the risk they higher will they expect returns.

R square is the explanatory power of the model, the changes cause by the portfolios. The higher will be the value of the R square they higher will be the explanatory power of the model. Haslem et al. (2008), Rehman and Baloch (2016) reported that the higher will be the value of the R-square they higher will be the explanatory power of the model.

4.4 Gibbon Ross Shanken (GRS) Test

Table 4.4 (GRS) Test

Models	GRS F-test	Mean Absolute Alpha
Rm_Rf	8.125	0.048
Rm_Rf, SMB, and HML	13.231	0.079
Rm_Rf, SMB, HML and MOM	14.825	0.082

GRS test was conducted for the prediction of a better model. The test resulted that CAPM outperforming the other models i.e. Fama French-3 factor and Carhart 4-factor as the value of mean absolute alpha of the CAPM is 0.048 which confirm the better validity of CAPM as compared to the other two competing assets pricing models. Rehman and Baloch (2016) also in their study also found that the CAPM is better model on the basis of absolute alpha value they rank CAPM above all other models.

4.5 Correlation Analysis

Table 4.5 Correlation

Variables	CAPM Alpha	Expense ratio	Fund Age	Fund size	Fund Liquidity
CAPM Alpha	1.000				
Expense ratio	0.081	1.000			
Fund Age	0.321	0.071	1.000		
Fund Size	0.243	0.121	0.091	1.000	
Fund Liquidity	-0.314	0.094	0.121	0.082	1.000

The Table 4.5 shows the correlation between dependent variable and independent variable of the study. Correlation is a statistical measured which shows the direction, strength and association of two variables the measured of strength between two variables is determined by co-efficient of determination, which is represented by small "r". The correlation values are usually lies between 1 and minus 1 (1, -1). The r value is one or near one is considered strong correlation the results shows that there is insignificant correlation between expense ratio and CAPM Alpha, as Cohen (1988) stated that the significance level is started from 0.1 and there is three slabs of significance level of correlation i.e. 0.1 to 0.29, 0.3 to 0.49 and 0.5 to 1. So as per the criteria provided by Cohen (1988) the correlation between expense ratio and CAPM Alpha is positive insignificant. Similarly the results indicate positive significant correlation between fund age and CAPM Alpha as per Cohen (1998). The results also showing positive and significant correlation between fund size and CAPM Alpha as according to Cohen (1988). Similarly the result demonstrate

4.6 Regression Analysis

Table 4.6 Regression

Variables	Co-efficient	St. errors	T-value	P-value
Expense ratio	0.0815	0.0520	1.5671	0.075
Fund Age	0.2156	0.0688	3.1343	0.001
Fund Size	0.1718	0.0643	2.6712	0.012
Fund Liquidity	-0.2061	0.0705	-2.9231	0.004
F- value:	72.56			
R-square:	0.46			

The results show that expense ratio has positive insignificant effect on the Funds 'risk adjusted performance. The P-value is insignificant at 5% probability level and hence t-value is also showing insignificant value of 1.56 less than the critical value of significance i.e. t=2. Similarly fund age demonstrating positive significant effect on the fund performance as the corresponding probability value is significant (P= 0.001) this determine that fund age carrying significant difference in the fund risk adjusted return. Fund age has positive significant effect on fund performance, due to the significant probability level at 5%, while fund liquidity showing negative significant effect on the mutual funds' performance as the t-value is -2.92 with a corresponding probability value of 0.004 which confirm the negative significant effect of fund liquidity on the fund performance. The F value is 72.56 which is significant and validate the significant of the models. R-square is 0.46 which means that 46% changes are caused by the set of independent variables in the mutual funds' performance. Rehman and Baloch (2016) found that the fund age, fund size and fund family are considerably improve the performance of mutual funds.

SCHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 Discussion

H1: All three models i.e. CAPM, Fama French-3 factor and Carhart-4 factor models equally predict and explain mutual fund performance in Pakistan.

The results confirmed that CAPM is the more suitable model, which explain well the performance of mutual funds as compare to the two other models i.e. Fama French 3-factor and Carhart 4-factor.The same results were generated by Rehman & Baloch (2016).

H2: Funds expense ratio has significant positive effect.

The results found that expense ratio has positive but insignificant effect on the risk adjusted performance of funds. Similar results were found by previous studies, who also predicted positive effect on the fund performance. Rehman & Baloch (2016), Cohen (1988), Daniel et al., (1997), Wermers (1997).

H3: Funds size has significant positive effect on mutual funds risk adjusted return.

The results also found that the fund size has positive significant effect on the risk adjusted mutual fund performance. Similar results were found by previous studies, who also predicted significant and positive effect of fund size on the fund performance. Rehman & Baloch (2016), Molson (2003), Rauf and Afza (2010).

H4: Funds age has positive significant effect on the risk adjusted performance of funds.

The result also shows that the fund age has positive significant effect on the risk adjusted fund performance. The same results were generated by Rehman & Baloch (2016), Nazir and Nawaz (2010).

H5: Funds liquidity has negative significant effect on funds return.

The results found that the fund liquidity presenting negative significant effect on the mutual funds' performance. Similar results were documented by previous studies, who also anticipated that funde liquidity has a negative significant on the fund performance. Rehman & Baloch (2016), Clifford (2013).

5.2 Conclusion

Mutual fund is the cluster of money collected from various investors for the object of financing in various securities means portfolio such as bonds, stocks and money market instruments. The study aimed at understanding the suitability of the various assets pricing models like CAPM, Fama French 3-factor and Carhart 4-factor. The study has first investigated the model testing and then investigated the effects of funds factors on their risk adjusted performance. The study collected data from 150 open ended mutual funds traded on MUFAP and applied these three models first and then analyzed the impact of the various funds factors on their performance. The results confirmed that CAPM is the more suitable model, which explain well the performance of mutual funds as compare to the two other models i.e. Fama French 3-factor and Carhart 4-factor. The results showing that funds managers have the ability of capturing market variables to some extent, as the majority of intercepts are closer to zero of the majority of portfolios. The results found that expense ratio has positive

but insignificant effect on the risk adjusted performance of funds. The result also shows that the fund age has positive significant effect on the risk adjusted fund performance. The results also found that the fund size has positive significant effect on the risk adjusted mutual fund performance. The results found that the fund liquidity presenting negative significant effect on the mutual funds' performance. The results found that CAPM is better model so it is advised that the researchers should use Capital Asset Pricing Model (CAPM) rather than other two competing models Fama French 3-factor and Car hart 4-factor model. The results found that fund expense ratio has positive effect on the fund performance therefore it is suggested that fund should increase fund expense ratio, when they increasing the fund expense ratio there will be a positive increase in the fund performance. Fund age has positive significant effect on therefore it is suggested that the investors should invest in those funds which have more and more age and matured. The investors are also advised based on the findings that they should invest in those funds having more funds size.

5.3 Recommendations of the Study

1. The results found that CAPM is better model so it is advised that the researchers should use Capital Asset Pricing Model (CAPM) rather than other two competing models Fama French 3-factor and Car hart 4-factor model.
2. The results found that fund expense ratio has positive effect on the fund performance therefore it is suggested that fund should increase fund expense ratio. When they increasing the fund expense ratio there will be a positive increase in the fund performance.
3. Fund age has positive significant effect on therefore it is suggested that the investors should invest in those funds which have more and more age and matured. The investors are also advised based on the findings that they should

invest in those funds having more funds size. In addition, the CAPM Models used on the data of Pakistani open ended mutual fund, indicated that most of the portfolio of high return do not have significant relationship with the market variations.

4. Similarly, the results also demonstrate a negative impact of funds family and liquidity on funds adjusted return, moreover, it is indicated that the fund's manager should avoid and uplifting the increase numbers of fund and should mature the available funds portfolio. Likewise the results also indicating a positive impact of fund age and size on fund adjusted return. Keeping in view the positive impact, it is suggested that the manager of these fund should try to not liquidate or stop investing in any of its fund and should continuously try to motivate and encourage investment in funds.

5.4 Limitations of Research

One of the limitations was time, due to which i only regressed the funds determinants of 40 funds. The other limitation was non applicability of the five factor model on the mutual fund performance due to its low size.

5.5 Future Directions

Future research can compare the funds' performance of emerging economies like Pakistan and Bangladesh or India. Similar studies can be conducted comprehensively analyzing the risk adjusted performance, timing abilities and selection abilities of Pakistani funds. Moreover comparative study of conventional & Islamic funds' performance can also be analyzed.

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