# A COMPARISON OF RISK ADJUSTED RETURN IN SELECT INDIAN EQUITY MUTUAL FUNDS

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## ABSTRACT

*Over the last three decades, the Indian mutual sector has seen enormous growth in terms of both resource mobilization and Assets Under Management (AUM). Before making an investment decision, investors evaluate the mutual fund's performance and this performance of mutual funds causes the mutual fund sector to expand. In this study, we attempted to examine and present empirical data on the risk adjusted performances of select Indian equity mutual funds. We have used monthly return data of thirty-three mutual funds. The select funds are equity based funds from various categories. We have measured Sharpe ratio, Treynor ratio, and Jensen Alpha as risk adjusted return and as well raw return for the selected mutual funds and assigned ranks to individual funds based on such performances. We also calculated Standard Deviation, Beta, and R Squared to measure the risk associated with the selected funds. We observed empirically that all of the performance measurements of the funds behave identically. Sundaram Mid Cap Fund, ASL MNC Fund Regular, HDFC Capital Builder Fund, and ICICI Long Term Equity Tax Saving Fund are the best-performing funds throughout the study period with a moderate amount of risks, whereas HDFC Growth Opportunity Fund and SBI Magnum Equity ESG Regular, Baroda Multi cap Fund, and Sundaram Select Focus fund are the poorest performers.*

***KEYWORDS**: Mutual Fund, Performances, Standard Deviation, Sharpe Ratio, Treynor Ratio, Jensen Alpha.*

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### Introduction

General people may opt for various investment avenues. They can invest through Post Office, Banks, Mutual funds, Stock Market etc. In India only 20 million people invested directly in the stock market as on F.Y. 2012 and it was 27.9 million in F.Y. 2017 million showing 6.9% annualized growth rate. (NSE India, RHP).  Approximately 3% of the total population directly invest in the stock market in 2021 (Swastika, 2021), Compared to this the number of retail participants in the stock market in China it is 14% of the total population whereas it is 55% in the case of the USA, 30% in the UK, 26% in the case of Malaysia, and 29.1% in the case of Singapore (Wazal et. al. 2017). It is observed that our country's equity market is not very much popular investment destination for the general people (Pal, 2021). There are various causes of such low participation of retail investors in India. One of the causes of such triviality in participation may be that the stock price is very much fluctuating and depending on the expectation of future prospect of the business (Umarani, 2012).  The price of stocks also depends on that prospect of balance sheet of the firm.  Investment in stock market may be made for long term as well as for short term. An investor must consider fundamental and technical analysis for a particular stock before investing but this is very difficult to perform at the end of   general retail investor. In our country with little knowledge of stock market, people do not have considerable interest to invest in stock market (Shaw,2017). Above all there are inconsistencies in the return generated from the investment made in

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stock market. Consequently, investors consider mutual fund, a passive way of investment in stock market on a common belief that professional managers can deliver superior performance relative to market return (Reilly & Brown, 2012). As mutual funds are professionally managed by fund managers investors may choose mutual fund schemes, for investing in a stock market in a passive way, as an investment destination. According to AMFI "Mutual Fund is a trust that pools the savings of a number of investors who share a common financial goal and invest it in capital market instruments such as shares, debentures and other securities." In India mutual fund Industry started its journey with formation of UTI in 1963. UTI was the only financial institution in this field during the period 1963-1987. From 1987 Govt. of India allowed public sector banks and financial institutions in mutual fund Industry. The industry witnessed major reforms in 1993 in line with new economy policy that allowed entry of private sector and foreign fund house with enactment of SEBI (MF) Regulation Act 1996.

Mutual fund's performance mainly depends on the portfolio and the portfolio strategies adopted by the fund managers for their fund. The success of the fund depends on the performance of the portfolio. One can invest money in various schemes of mutual fund like open-end equity fund, close-end equity fund, balanced fund, Equity Linked Savings Scheme (ELSS) fund, sector specific fund and liquid fund keeping in mind investors need, risk capacity and expectations. Investor can make lump sum investment in mutual fund or may be through Systematic Investment Plan (SIP) or Systematic Transfer Plan (STP). Several researches have been conducted on performance of mutual fund in the developed financial market. However emerging market like India is away from the purview of performance analysis of growth-oriented equity mutual fund. So, the performance in Indian mutual fund in respect to select schemes will be identified. Specifically in this paper our objective of the study as follows:

- To generate risk adjusted performance indicators in various forms of select equity mutual funds.
- To analyze and compare the generated performance indicators.

**Review of Literature**

A number of studies are reviewed on the performance analysis of mutual fund schemes. There are lot of studies have been done in developed financial markets on performance analysis. In my opinion, several researches have been done on performance analysis in India also. However emerging market like India are not touched in great extent in respect to performance analysis of growth-oriented equity schemes like developed countries.

Bahl and Rani (2012) evaluated the performance of 29 open ended growth oriented mutual fund schemes by using monthly return, Sharpe ratio and Treynor ratio and Jensen measure and pointed out that 14 funds had out performed benchmark index, Sharpe ratio was positive for all fund, 19 fund showed positive Jensen alpha indicating superior performance of the fund for the study period April 2005-March2011.

Annapurna and Gupta (2013) investigated the performance of mutual fund schemes ranked 1 by CRISIL for the period 2008-13 and compared the mean returns with the SBI domestic term deposit rates. The result of the paper expressed that most of mutual fund schemes have failed even to provide the return of SBI domestic term deposits.

Abdullah and Abdullah (2009) investigated relationship between domestic and international mutual fund of Malaysia. They found that the risk adjusted performance of international fund is not significantly different from domestic fund using Shape ratio, Treynor ratio and Jensen alpha.

Keswani (2011) evaluated the effect of fund size on the performance of 30 balanced mutual fund classifying according to size using correlation matrix. This paper concluded that there was no significant evidence that the fund size affects the performance of selected balanced mutual fund.

Vasantha et al (2013) examined the performance of some select open ended equity diversified Mutual fund in Indian mutual fund industry for 5 years from January 2008 using rate of return, Sharpe ratio and Treynor ratio and Jensen measure and pointed out that HDFC Top 200 and Birla sun life from line equity fund was good performer with low beta value.

Ramanujam and Bhuvaneswari (2015) evaluated growth and performance of Indian mutual fund industry for the period of April 2004 to March 2014 from the view point of different parameters like asset under management, sector wise mutual fund sale, scheme wise resource mobilization, total number of schemes. They pointed out that the investors preference towards financial assets is increasing as all the parameters had shown a tremendous increasing growth rate.

Kadambat et al (2015) studied the risk adjusted performance of ELSS with other diversified equity funds in Indian mutual fund for 2001-2013 comparing with 12 top diversified equity funds and 7 benchmark indexes. They pointed out that ELSS funds has underperformed both against sample diversified Equity Funds and Benchmark Indexes on a risk adjusted basis using Sharpe ratio and Sortino ratio.

Narayanasamy and Rathnamani (2013) evaluated performance of equity mutual funds on selected equity large cap fund through the statistical parameters such as alpha, beta, standard deviation, r-squared, Sharpe ratio and concluded that all the funds have performed well in the high volatile market movement except Reliance vision.

Shukla (2015) depicted a comparative performance of selected mutual fund from five category with the statistical parameters such as alpha, beta, standard deviation, r-squared, Sharpe ratio and pointed out that Infrastructure and Mid & Small Cap funds have performed better than the benchmark.

Sondhi and Jain (2006) examined the fund manager's selectivity skills of stocks in diversified equity mutual funds in India of 36 selected mutual funds out of 21 Asset management Company using Jensen alpha as performance indicator and concluded that 56 percent fund managers have request ability to identify undervalued stock which performed very well in the future.

Afza and Rauf (2009) measured performance of funds of Pakistan mutual fund using time series and cross-sectional data of Sharpe ratio. They evaluated management effectiveness of funds by examining relationship of fund performance with fund size, expenses load, turnover and liquidity. They concluded that lagged return and liquidity have significant impact on performance on the Pakistani Mutual fund.

Umarani (2012) studied on the growth of mutual fund industry and observed stage wise development of mutual fund. The three stages were considered as early stage (1963-1986), second phase (1987-1993) considering reforms of entry of private sector. Third phase (1993-2003) entry of private sector and present stage 2003 onwards till the date.

Redman et al (2000) studied risk adjusted return using Treynor index, Sharpe index, Jensen alpha for five international mutual funds for different sub period and observed the outperformance of the portfolios in different period.

Pandow (2017) studied the persistence performance of fund managers regarding stock selection and timing ability as investors need consistency in performance of fund managers. The study was conducted through Henrikson & Morton model, Jensen alphas, and Fama's model for period of five years. He founded that selected Indian mutual fund managers were persistent in stock selection but stock selection did not show progressive timing skills.

Shaw (2017) evaluated performance of growth oriented diversified mutual funds in India and found ICIC Pru value discovery Fund(G) with beta value (1.0020) almost equal to one for the study period.

Kaur & Pasricha (2018) evaluated performance of debt mutual fund in India on the basis of risk adjusted performance indicators. They observed that on a comparative basis among different funds Birla Sun Life and Franklin India mutual fund performed better in terms of raw return and risk-adjusted measures.

Sarkar & Ghosh (2019) studied the Stock selectivity and market timing skill of Indian muti cap mutual fund using Jensen alpha, Fama decomposition model and Treynor Muzy model. They observed that the funds are failed to generate any superior stock selection skill and market timing skills in the study period.

Kumar & Mensumane (2021) examined effect of fund size on performance of Indian mutual funds. They found that AUM and Number of Subscriber have short term influence in the performance. They also observed that fund age and portfolio holding do not significantly influence return in short run and long run.

**Data and Methods**

**Data and Sample**

The present study covers only those growth-oriented equity mutual fund schemes started before and from 2003 and have its operation till 31st march 2022 and AUM more than 500 crores on 31st march 2022. On this date, there were 671 equity mutual funds in operation including direct plans. We collected

a data set for 33 equity based mutual funds from April 2003 to March 2019 a period which covers lots of market ups and downs and various turbulences like the subprime crisis, US financial crisis, Demonetization, etc. Out of the selected funds, six were large cap funds, five were from large & mid cap funds, four funds were from multi cap funds, four were from mid-cap funds, seven were ELSS funds, one dividend yield fund, four were from sectoral funds, one from focused funds and one from value funds category. The category of the schemes was taken from money control website. We have chosen 2003 as the starting year because it is the starting of the fourth phase of growth of the mutual fund industry in India. Many reforms have been taken before 2003 in the Indian mutual fund sector in line with the global scenario. Monthly return, CNX-Nifty and average of 91-day Treasury bill are considered as portfolio return, proxy of market and Risk-free return respectively. Sharpe ratio, Treynor ratio, and Jensen alpha measures are used for analyzing the performance of selected mutual funds as risk adjusted return. To analyze the performance statistical techniques like Pearson's simple correlation analysis, Spearman's rank correlation analysis is used. The study is based on secondary data. Various books, research paper, web sites are used to perform the study. We calculated various performance measures taking into average performances.

**Performance Indicators**

The study was conducted on the basis of four performance indicators. These were simple monthly Raw Return, Risk adjusted measures such as Sharpe Ratio, Treynor Ratio, and Jensen Alpha.

- Simple monthly Raw Return has been calculated for each selected open end equity mutual fund scheme as follows.

  $R_{i,t} = (NAV_{i,t} - NAV_{i,t-1})$ …………………(1)

  Where $R_{i,t}$ = Return of the i th scheme at t period

  $NAV_{i,t}$ = Net Asset Value ( NAV) of the i th scheme at t period

  $NAV_{i,t-1}$ = Net Asset Value ( NAV) of the i th scheme at t-1 period

  Therefore, each scheme has 192 simple monthly return data and these monthly Raw Return data have been used to calculate other performance indicators.

- Sharpe Ratio (Sharpe, 1966) is a risk adjusted performance measure of mutual fund schemes. It indicates the fund's excess return per unit of its total risk. Here the risk is measured as Standard Deviation (SD) of funds return.

  Sharpe ratio = $\dfrac{R_{i,t} - RF_t}{\sigma_{i,t}}$ ……………………(2)

  Where $RF_t$ = Risk Free return of the period t

  $\sigma_{i,t}$ = Standard Deviation of i th fund at period t

  It helps to compare risk adjusted returns of any two mutual fund schemes irrespective of their volatility and benchmark as this performance indicator indicates risk premium return per unit of fund's risk. (Reilly and Brown)

- Treynor ratio (Treynor, 1966) is a measure of the fund's excess return or risk premium per unit of systematic risk of the funds. According to the Treynor ratio, there are two components of risk (1) Risk due to market fluctuation and (2) Risk due to fluctuation in the value of the portfolio. Treynor introduced a characteristics line of the fund which is the relation between the return of the market portfolio and managed portfolio. The slope of this line is the beta coefficient of the portfolio.

  Treynor Ratio = $\dfrac{R_{i,t} - RF_t}{\beta_{i,t}}$ ………………..(3)

  $B_{i,t}$ = Systematic risk of the fund

- Jensen Alpha (Jensen, 1968) is the portion of the excess return of a portfolio that is not explained by systematic risk, beta. Jensen Alpha is the difference between actual return over

the expected return according to the Capital Asset Pricing Model (CAPM). The expected return of a portfolio is equal to the risk-free return plus beta of the portfolio times market risk premium which is just the expected return of the market minus the risk-free rate. This expected return is based on CAPM.

The expected return

$$R_{i,t=} RF_t + \beta( RM_t - RF_t) + \varepsilon_{i,t}$$ …………………………..(4)

Where $RM_t$ is market return at period t

$\varepsilon_{i,t}$ is the error term

Subtracting $RF_t$ from both sides

$$R_{i,t=} \beta( RM_t - RF_t) + \varepsilon_{it}$$ ……………………(5)

So, the risk premium earned is equal to the beta time market risk premium. Here there is no intercept if all assets in the portfolio are in equilibrium but a superior fund manager consistently tried to enhance actual return over expected return. So, the superior performance is the alpha that is added by the managerial skill. So, by adding an intercept i.e $\alpha$ to the equation (5) the equation becomes

$$R_{i,t} - RF_{t=}\alpha + \beta( RM_t - RF_t) + \varepsilon_{it}$$ ……………………(6)

- Spearman Rank Correlation Coefficient (SRCC):
  We use the following formula to perform SRCC test–

$$R_{s =} 1 - \frac{6\sum D^2}{n(n^2-1)}$$ ………………..(7)

Here, Rs = Spearman rank Correlation Coefficient

d = Difference between rank of a fund,

n = no of observations

- Beta
  Beta of a fund indicates volatility of fund's return in respect to its benchmark. A scheme is more volatile if its beta value is greater than 1. The scheme is less volatile than the benchmark if beta is smaller than 1. Beta is calculated by dividing the product of covariance of fund's return and market return by the variance of market return for the particular period.
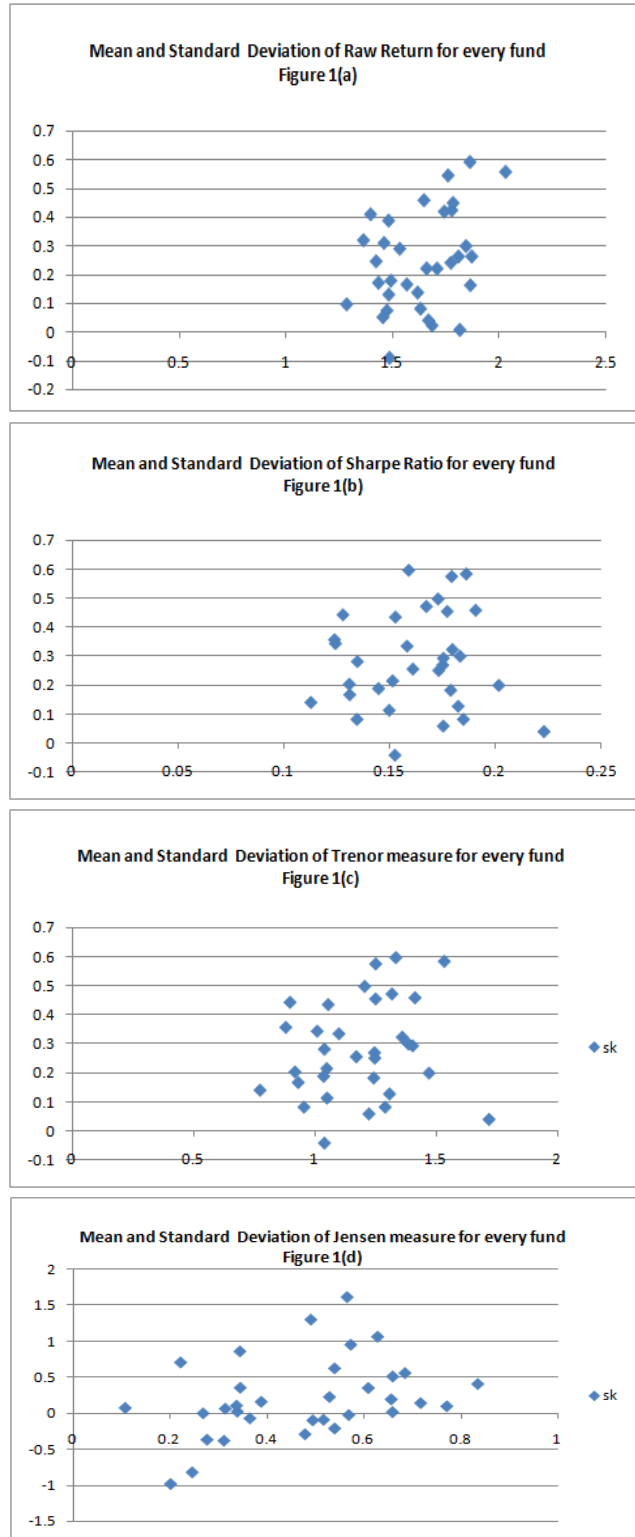
$$Beta = \frac{COV( Rit,RMt)}{VAR(RMt)}$$ …………………(8)

- R-Squared
  R squared of a fund indicates the association between fund's return with the return of its benchmark. It helps to find how a fund's performance is identical with its benchmark. It is calculated by squaring the correlation of fund's return and benchmark's return. Higher the r squared indicates portfolio's movement is same direction of the movement of the benchmark. Lower r squared does not always mean the fund is not performing well. Some equity fund may outperform its benchmark consistently, in that case r squared may be low.

**Results**

We conduct a mean and standard deviation analysis to study the effects of the different measures on the mutual fund classification. Figure 1 shows that most of the funds behave similarly when evaluated in terms of Raw return, Sharpe Ratio, Treynor Ratio. On the contrary, funds present different means and standard deviation when observed through the Jensen Alpha. This indicates some fund managers have superior stock selection ability which helped them to generate more alpha than the other fund managers.

**Figure 1: Performance Measures mean and the SD**



Mean and Standard Deviation of Raw Return for every fund
Figure 1(a)



Mean and Standard Deviation of Sharpe Ratio for every fund
Figure 1(b)



Mean and Standard Deviation of Trenor measure for every fund
Figure 1(c)



Mean and Standard Deviation of Jensen measure for every fund
Figure 1(d)

The figure above shows the mean and SD of performance indicators calculated by averaging the monthly performance of each fund.

The calculated the performances and assign individual rank (Table 1) fund wise and performance measure wise. As performance wise rank of individual fund is varying, we calculated average rank for each fund again assigned individual rank of fund on the basis of average ranks. Table 1 exhibits Sundaram Mid cap fund, Aditya Birla Sun Life MNC Fund regular fund, HDFC cap builder fund, ICICI Long term equity tax savings fund is the best performing fund as these funds are top of lists among the various performance measures. HDFC Growth Opportunity Fund, SBI Magnum Equity ESG regular, Baroda Multi Cap Fund Plan A (G) and Sundaram Select focus fund are the worst performer in the study period as these funds are always in the bottom of the list on the basis of various performance measures. We also calculated the standard deviation, beta and r squared of the selected fund and presented in table 2 of the paper.

The correlation among the different measures is also important for the study. We conducted Spearman's Rank correlation of performance of various performance measures to check whether the performance measures produce analogous rankings. Table 3 exhibits Spearman's Rank correlation coefficient. It indicates a high Correlation between the Raw Return, Sharpe ratio, Treynor ratio, and Jensen Alpha. All performance indicators point out to the same direction of performance.

**Concussion**

- Spearman's Rank correlation coefficient indicates a high Correlation between the Raw Return, Sharpe ratio, Treynor ratio, and Jensen Alpha.

- Spearman's Rank correlation coefficient yields almost same result when performances are measured in terms of various performance measures.

- All the risk adjusted performance measures such as Sharpe ratio, Treynor ratio and Jensen alpha yield almost same results.

- When performances are evaluated in term of Raw Return and Jensen alpha Sundaram Mid cap fund is first rank holder but HDFC Growth Opportunity Fund was the worst performer in terms of all performance measures.

- Franklin Blue chip Fund equity fund performs almost in line with the market return as its beta is almost equal to one.

- HDFC capital builder fund is very consistent throughout the risk adjusted performance measures and best performing fund as its beta is less than one and r squared is also high.

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**Table 1: Rank Order According to Various Performance Measures**

| Name Of Funds | Raw Return | Sharpe Ratio | Treynor Ratio | Jensen Alpha | Average Rank | Overall Rank |
|---|---|---|---|---|---|---|
| Sundaram Mid cap fund | 1 | 4 | 2 | 1 | 2.00 | 1 |
| Aditya Birla Sun Life MNC Fund regular fund | 6 | 1 | 1 | 2 | 2.50 | 2 |
| HDFC cap builder fund | 3 | 2 | 3 | 3 | 2.75 | 3 |
| ICICI Long term equity tax savings fund | 2 | 6 | 6 | 4 | 4.50 | 4 |
| Reliance Growth fund | 5 | 8 | 7 | 6 | 6.50 | 5 |
| HDFC Long term advantage | 12 | 3 | 4 | 8 | 6.75 | 6 |
| Franklin India Prima Fund | 7 | 12 | 5 | 5 | 7.25 | 7 |
| Reliance Vision fund | 4 | 19 | 8 | 7 | 9.50 | 8 |
| Aditya Birla Sun Life Mid cap fund | 8 | 17 | 9 | 9 | 10.75 | 9 |
| HDFC Equity Fund | 9 | 11 | 13 | 10 | 10.75 | 10 |
| HDFC top 100 fund | 11 | 9 | 12 | 12 | 11.00 | 11 |
| Franklin India Equity Fund | 15 | 5 | 11 | 13 | 11.00 | 12 |
| Aditya Birla Sun Life Equity Fund | 10 | 14 | 15 | 11 | 12.50 | 13 |
| UTI Equity fund regular plan growth plan | 18 | 7 | 10 | 15 | 12.50 | 14 |
| HDFC TaxSaver Fund | 13 | 15 | 14 | 14 | 14.00 | 15 |
| DSP Equity opportunity Fund | 14 | 13 | 17 | 16 | 15.00 | 16 |
| Franklin India Taxshield fund | 19 | 10 | 16 | 17 | 15.50 | 17 |
| Tata Large cap Fund | 17 | 16 | 18 | 18 | 17.25 | 18 |
| Sundaram diversified equity fund | 16 | 18 | 19 | 19 | 18.00 | 19 |
| Aditya Birla Sun Life Equity Fund | 21 | 20 | 20 | 20 | 20.25 | 20 |
| DSP top 100 fund | 22 | 23 | 23 | 22 | 22.50 | 21 |
| Franklin Blue chip | 25 | 21 | 21 | 23 | 22.50 | 22 |
| Reliance Vision Fund | 20 | 25 | 26 | 21 | 23.00 | 23 |
| ICICI Pru Large & Mid Fund | 23 | 22 | 24 | 25 | 23.50 | 24 |
| Kotak Blue Chip fund | 26 | 24 | 22 | 24 | 24.00 | 25 |
| Aditya Birla Sun Life Dividend yield fund regular | 30 | 26 | 25 | 26 | 26.75 | 26 |
| Aditya Birla Sun Life Equity Advantage fund | 24 | 28 | 29 | 29 | 27.50 | 27 |
| Franklin India opportunity fund | 28 | 27 | 28 | 28 | 27.75 | 28 |
| SBI Magnum Taxgain scheme | 27 | 31 | 27 | 27 | 28.00 | 29 |
| Sundaram Select focus fund | 29 | 29 | 30 | 30 | 29.50 | 30 |
| Baroda Multi Cap Fund Plan A (G) | 31 | 30 | 31 | 31 | 30.75 | 31 |
| SBI Magnum Equity ESG regular | 32 | 32 | 32 | 32 | 32.00 | 32 |
| HDFC Growth Opportunity Fund | 33 | 33 | 33 | 33 | 33.00 | 33 |

**Table 2: Standard Deviation, Beta and R squared of Select Funds**

| Name of the Schemes | Standard Deviation | Beta | R squared |
|---|---|---|---|
| Aditya Birla Sun Life Frontline equity fund | 6.1441 | 0.9748 | 86.83 |
| HDFC top 100 Fund | 6.6842 | 0.8926 | 86.16 |
| Franklin Blue chip Fund equity fund | 6.0243 | 1.0011 | 87.84 |
| DSP top 100 Fund | 6.1478 | 0.9769 | 87.3 |
| Kotak Blue Chip Fund | 6.0903 | 0.9744 | 85.25 |
| Tata Large cap fund | 6.2807 | 0.9505 | 86.26 |
| DSP Equity opportunity Fund | 6.4097 | 0.9311 | 86.22 |
| Reliance Vision Fund | 6.9421 | 0.8373 | 81.79 |
| Aditya Birla Sun Life Equity Advantage fund | 7.0215 | 0.8338 | 82.96 |
| ICICI Pru Large & Mid cap Fund | 6.06 | 1.0073 | 90.18 |
| HDFC Growth Opportunity Fund | 6.4127 | 0.9439 | 88.68 |
| HDFC Equity Fund | 6.8584 | 0.8603 | 84.25 |
| Franklin India Equity Fund | 5.9855 | 0.9971 | 86.22 |
| Aditya Birla Sun Life Equity Fund | 6.917 | 0.8461 | 82.91 |
| Baroda Multi Cap Fund Plan A (G) | 6.5299 | 0.9071 | 84.92 |
| Reliance Growth fund | 7.1362 | 0.7711 | 73.29 |
| Franklin India Prima Fund | 7.1113 | 0.7320 | 65.58 |
| Sundaram Mid cap fund | 7.8934 | 0.6399 | 61.74 |
| Aditya Birla Sun Life Mid cap fund | 7.2964 | 0.7229 | 67.34 |

| | | | |
|---|---|---|---|
| HDFC TaxSaver fund | 6.6239 | 0.8724 | 80.82 |
| SBI Magnum Taxgain scheme | 7.2185 | 0.7104 | 63.65 |
| ICICI Pru. Long term equity tax savings schemes | 7.1391 | 0.7722 | 73.55 |
| Franklin India Taxshield Fund | 5.9044 | 1.0148 | 86.89 |
| Sundaram diversified equity fund | 6.83 | 0.8345 | 78.62 |
| UTI Equity fund regular plan growth plan | 5.8657 | 0.9820 | 80.3 |
| HDFC Long term advantage fund | 6.1932 | 0.9075 | 76.46 |
| Aditya Birla Sun Life Dividend yield fund regular fund | 6.3915 | 0.8446 | 70.53 |
| Aditya Birla Sun Life MNC Fund regular | 5.6279 | 0.9601 | 70.67 |
| Reliance Banking fund | 8.1743 | 0.6110 | 60.38 |
| SBI Magnum Equity ESG regular fund | 6.4753 | 0.9036 | 82.87 |
| Franklin India opportunity fund | 6.6423 | 0.8818 | 83.05 |
| Sundaram Select focus fund | 6.6581 | 0.8908 | 85.15 |
| HDFC capital builder fund | 6.4604 | 0.8842 | 78.98 |

**Table 3: Rank Correlation Matrix**

| | Raw Return | Sharpe Ratio | Treynor Ratio | Jensen Alpha |
|---|---|---|---|---|
| Raw Return | 1 | | | |
| Sharpe Ratio | 0.8486 | 1 | | |
| Treynor Ratio | 0.9325 | 0.9352 | 1 | |
| Jensen Alpha | 0.9763 | 0.9061 | 0.9806 | 1 |

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