

# Validation of Selection Techniques of Mutual Fund Schemes In India

Sachin Kumar Rohatgi, P.C. Kavidayal, Bhakti Bhushan Mishra, Krishna Kumar Singh, Anjali Dixit

**Abstract:** Investment is necessary for saving and mutual fund can be treated as a vehicle of investment which is liked by all the ages of investors who want to take a ride on it. For doing so, they contribute in this vehicle depending on their risk and return appetite. The fund are invested in the vehicle is driven, controlled and managed by a fund manager. This investment fund uses capital market, money market and debt market to park its funds and get a return on the same. This investment opportunity is best suited for the investor's class who wants a more diversified investment portfolio. In the modern times mutual fund is a big industry in which many private players are coming and trying to capture the growth. There are many schemes launched by the private players which are creating super normal growth for its investors. The various options in the mutual funds schemes have increased their acceptance to a large investor base. Therefore it is imperative to identify and select those schemes of mutual fund which are best in the lot and can offer better returns to the investors. This research paper has put an effort on validating the selection techniques of mutual fund in India on the basis of return and risk frontier. Paper discussed the basis of selection of all mutual fund schemes based upon highest net asset and ranking. The ranking of these mutual fund schemes are validated by calculating the monthly returns of the funds. Researchers considered data from different sources like yahoo finance, value research online, RBI, NSE etc for this study. After this study, researchers will try to help the investors to identify and select the mutual fund schemes carefully in their portfolio as all the mutual fund schemes even if they are on higher ranking may not perform well in the short run. This will help the investors in maximizing their returns.

**Keywords:** Mutual fund, Mutual fund performance, NAV, Risk Return,

## I. INTRODUCTION

Consumption and investments are integrated in such a way that if one increases the other one will decrease. However investments and savings are directly associated to each other as if saving increases, it tends to give a positive effect on the investment. Therefore it is important that people should save more and as result invest more so that additional capital can be created for nation's economic wealth. For creating

economic changes in a nation it is important that the people of the nation are available with the easy and simple investment avenues so that they can invest their money in an easy way. In this context mutual fund can be suggested as that investment vehicle which is looked upon and appreciated by all the types and ages of investors, where they can invest their savings which are managed by the managers generally called as fund managers. It is an association of people where experts are acting for the beneficiary (Investors) and in the process it sells the various classes of assets and helps the beneficiaries to hold their claims indirectly in the assets.

## II. HISTORICAL EVIDENCE

Bhagyasree N., Mrs. B. Kishori (2016)<sup>1</sup> have studied the returns of 30 equity Oriented mutual fund schemes. In their study it was concluded that out of 30 schemes 14 have outperformed the market and benchmark return. Further it was stated that as all the schemes are giving positive sharp ratio it means they are giving returns more than Rf. On the same lines Dhandayuthapani, S.P. & Arunpratheep, S. (2018)<sup>2</sup> concluded that the Sharpe ratio and Treynor ratio were positive for all the schemes they have taken into their study. It means that the funds have given the higher returns than the risk free rate. Pal, Shilpi & Chandani, Arti. (2014)<sup>3</sup> evaluated the mutual fund schemes on the basis of 3 year and 5 year GAGR and also compare the risk based on beta and found that the HDFC Midcap Opportunities (G) is the best scheme for the investors. Panwar, Sharad & Madhumathi, R. (2006)<sup>4</sup> there is no statistical difference between the returns of the public sector sponsored, private sector Indian sponsored and private sector foreign sponsored mutual fund schemes in India, but they are different in average standard deviation, variance and co-efficient of variation. Further it was concluded that these mutual funds are not differ even on its portfolio characteristics. Prajapati, Kalpesh P & Patel, Mahesh K. (2012)<sup>5</sup> have conducted the study of selected mutual fund schemes during 2007 and 2011 and concluded that the mutual fund schemes have given a better result than the Sensex index. They have also commented on risk exposure of these schemes and it was found that all the concerned schemes have a beta less than one.

## III. OBJECTIVES OF THE STUDY

1. This journal uses double-blind review process, which means that Performance appraisal of some selected mutual fund schemes.
2. Compare the returns of these selected mutual fund schemes

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3. Techniques to evaluate schemes of mutual fund are validate.

$\sigma_p$  stands for the total risk or standard deviation of the portfolio (Mutual Fund Scheme)

**IV. RESEARCH METHODOLOGY**

**Extent of study**

Research is conducted for the period of 2 years (2017-19). In the study total 6 diversified mutual schemes are selected and evaluated. They are selected from the population on the basis of their highest asset valuation. Further the objective of the study is to validate performance results that are given by the two evaluation techniques i.e., Treynor and Sharpe ratios.

**Data collection methods**

Newspapers, journals, books, periodicals and website of fund houses, Yahoo finance, RBI, etc. are the sources through which secondary data for the study has been collected. The daily and monthly returns of the scheme are calculate by the daily/monthly NAV. 91- days Treasury Bill (Primary) yield is taken from RBI website, as a  $R_f$ .

**Tools**

The returns and risk of the mutual fund schemes are calculated by the use the different statistical tools like standard deviation, estimation of beta and mean. Average returns are used to analyze and show the pattern of returns under selected schemes. Sharpe and Treynor ratios are also used for the ranking of these schemes on the basis of their returns.

**V. TOOLS USED**

**Average returns**

The present assessment of the schemes is endeavored through contrasting the returns of the scheme with the returns of the market. In this paper the returns of the market depend on the NSE INDEX returns. Here the daily and monthly returns of the schemes were evaluated by the NAV of the schemes and after that average returns were calculated by using simple mean.

**Standard Deviation (SD)**

Standard deviation is used to measure the overall risk. It quantifies total dispersion of data, the higher the deviation, the greater the difference of values that make up its means. Lower SD maintains data homogeneity.

**Beta**

Beta is a standard risk assessment tool. For the market it is always 1. The beta for the scheme is compared with the beta for the market and a higher beta ensures that the fund scheme is more volatile than the market and if the beta is lower than the market it ensures that the fund less volatile.

**The Sharpe Ratio**

This ratio gauges the connection between the portfolio's extra return over risk free return and total risk which is estimated in terms of standard deviation. A high Sharpe proportion shows the positive and superior risk adjusted performance of the fund over the market while a low Sharpe proportion propose that the assets returns are lower than the market. The model assesses the fund based on returns per unit of risk.

It can be symbolically written as:

$$\text{Sharpe Ratio}^{16} = (R_p - R_f) / \sigma_p$$

$R_p$  stands for average return on portfolio (Mutual Fund Scheme)  
 $R_f$  stands for risk free rate of return (91- days Treasury Bill yield)

**The Treynor's Ratio**

This ratio gages the correlation between the funds return over the risk-free return and systematic risk determined by index's valuations, the better the fund's returns and vice-versa. It can be written as:

$$\text{Treynor's Ratio}^{15} = (R_p - R_f) / \beta_p$$

$R_p$  stands for average return on portfolio (Mutual Fund Scheme)  
 $R_f$  stands for risk free rate of return (91- days Treasury Bill yield)  
 $\beta_p$  stands for systematic risk or sensitivity of Mutual Fund return to Market (Nifty) return.

**VI. DATA ANALYSIS**

Following six diversified equity mutual fund schemes are selected on the basis of the highest valuations of asset under management (AUM)

Fund	Net Assets (Cr)
Kotak Standard Multicap Fund - Direct Plan	23880.98
HDFC Equity Fund - Direct Plan	22376.35
Aditya Birla Sun Life Frontline Equity Fund - Direct Plan	22175.16
SBI Bluechip Fund - Direct Plan	22100.45
ICICI Prudential Bluechip Fund - Direct Plan	21578.74
Axis Long Term Equity Fund - Direct Plan	18851.87

Source: Value Research Online <sup>6</sup>

First of all, the annual returns are calculated on the basis of daily NAV of the mutual fund schemes during financial year 2017-18. As absolute annual return is not the sole criteria to evaluate the performance of different mutual funds, that's why the standard deviation of the annual returns of mutual fund schemes are calculated to measure the Sharpe ratio of each scheme. Sharpe ratio clarifies the excess return (over risk free rate of return) of the portfolio per unit of total risk (Standard Deviation) of portfolio. Along with that to measure the sensitivity of returns of all the mutual fund schemes with respect to market return (NIFTY), beta coefficient is calculated to find out the Treynor ratio. Treynor ratio gives the excess return (over risk free rate of return) of the portfolio per unit of systematic risk (Beta) of portfolio with respect to market (NIFTY).

91- days Treasury Bill (Primary) yield as on 30-03-2018 (6.11 %) <sup>7</sup> is taken from RBI website, as risk free rate of return for the purpose of calculating both the Sharpe and Treynor ratios.



Mutual Fund Schemes	RETURN (%)	Std. Dev.	BETA	SHARPE Ratio	Sharpe Ranking	TREYNOR Ratio	Treynor Ranking
Kotak Standard Multicap Fund - Direct Plan	11.17	0.642995	0.591603	7.86942	4	8.553026	2
HDFC Equity Fund - Direct Plan	8.41	0.905151	0.558902	2.541012	6	4.115212	5
Aditya Birla Sun Life Frontline Equity Fund - Direct Plan	8.98	0.641959	0.960439	4.470694	5	2.988218	6
SBI Bluechip Fund - Direct Plan	11.61	0.647557	0.958143	8.493464	3	5.740273	4
ICICI Prudential Bluechip Fund - Direct Plan	13.14	0.666643	1.00317	10.54538	2	7.007782	3
Axis Long Term Equity Fund - Direct Plan	17.23	0.638149	0.847387	17.42539	1	13.12269	1
9 T bill return	6.11						

Based on the data analysed above of the selected mutual fund schemes for FY 2017-18, Axis Long Term Equity Fund - Direct Plan has performed best on the parameters- Annual Return of 17.23% and performance evaluation scales- Sharpe and Treynor ratios. ICICI Prudential Bluechip Fund - Direct Plan has given second highest return of 13.14% with Sharpe rank 2 and Treynor rank 3. SBI Bluechip Fund - Direct Plan and Kotak Standard Multicap Fund - Direct Plan have generated annual return 11.61% and 11.17% respectively with sharpe rank- 3 and 4 and Treynor rank 4 and 2. Aditya Birla Sun Life Frontline Equity Fund - Direct Plan and HDFC Equity Fund - Direct Plan have garnered annual return 8.98% and

8.41% respectively with sharpe rank- 5 and 6 and Treynor rank 6 and 5. Thus it is evident from the analysis that Axis Long Term Equity Fund - Direct Plan has performed best during FY 2017-18 on all the parameters.

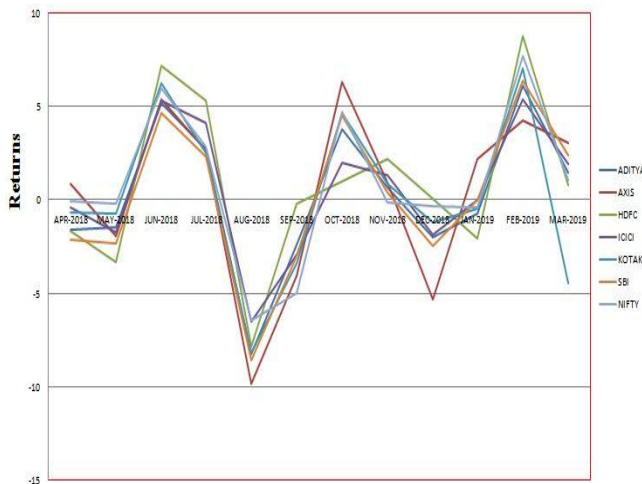
### VII. RESULT ANALYSIS

To validate the performance analysis of the selected mutual fund schemes, the return of next financial year 2018-19 on monthly basis is analyzed.

Month	KOTAK <sup>12</sup>	HDFC <sup>10</sup>	ADITYA <sup>8</sup>	SBI <sup>13</sup>	ICICI <sup>11</sup>	AXIS <sup>9</sup>	NIFTY <sup>14</sup>
Apr-18	-0.66705	-1.70997	-1.61276	-2.11992	-0.42323	0.834365	-0.02979
May-18	-0.75188	-3.32988	-1.48263	-2.35006	-1.74734	-1.98544	-0.20352
Jun-18	6.274584	7.1303	5.178531	4.611916	5.311221	5.346464	5.993861
Jul-18	2.543932	5.285092	2.737293	2.285519	4.130536	2.640741	2.852992
Aug-18	-8.19336	-7.84571	-8.24394	-8.56764	-6.53079	-9.85398	-6.42138
Sep-18	-3.37852	-0.2555	-2.39936	-2.98328	-2.95429	-4.04572	-4.97556
Oct-18	4.648244	0.949702	3.762373	4.524068	1.956999	6.27731	4.719065
Nov-18	0.88893	2.176423	0.651652	0.39337	1.350708	0.891247	-0.13056
Dec-18	-1.20691	0.042379	-1.97466	-2.47297	-1.87047	-5.30679	-0.2909
Jan-19	-0.49037	-2.11146	-0.74539	-0.03494	0	2.135821	-0.355
Feb-19	7.046106	8.723986	6.088692	6.35888	5.384796	4.207956	7.703501
Mar-19	-4.48243	0.776913	1.424735	2.406001	1.899163	3.051849	1.068918
<b>Annual Return</b>	8.095	9.029	2.555	1.088	5.972	2.943	9.393

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Monthly Returns during FY 2018-19



During FY 2018-19, Axis Long Term Equity Fund - Direct Plan (performance rank 1 during FY 2017-18) has given the superior returns only in the months of October 2018 and January 2019. ICICI Prudential Bluechip Fund - Direct Plan with performance rank 2 as per sharpe ratio, has performed better in the months of July, August, November' 2018 and January' 2019 during FY 2018-19. Kotak Standard Multicap Fund - Direct Plan with Treynor rank 2, has given relatively better results in the months of June, October' 2018 and February' 2019 during FY 2018-19. None of the selected mutual fund has given better than market return in FY 2018-19.

### VIII. CONCLUSION

Researchers have taken six mutual fund schemes from different fund houses and compared them on the basis of Sharpe and Treynor ratios for the evaluation. While comparing, it is observed that Axis long term equity fund - Direct Plan have the 1<sup>st</sup> rank from both the evaluating ranking methods. However other schemes got a different ranking like, ICICI Prudential Blue chip Fund - Direct Plan got 2<sup>nd</sup> rank as per Sharpe ratio and 3<sup>rd</sup> rank as per Treynor ratio. Further the returns of all these mutual fund schemes are compared on monthly basis from April 2018 to March 2019 and it was found that Axis bank has given superior returns only in the month of October 2018 i.e. 6.27731% despite of its 1<sup>st</sup> rank among the schemes. On the other hand ICICI Prudential Blue chip Fund - Direct Plan despite of its 2<sup>nd</sup> rank got the highest returns in the month of July 2018 i.e. 4.13053%, August 2018 i.e. -6.530%. Therefore it is evident that the ranking given by Sharpe ratio and Treynor ratio are not justified in the monthly returns.

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Dr. Kavidayal has published several research papers in Journals of repute and participated in many National and International Conferences. He is actively engaged in supervision of Ph.D. scholars and MBA research projects where 5 PhDs. have been awarded and 7 scholars are currently working under his supervision.. He is on the reviewers' panel for various Journals and on the panel of selection committees for Faculty in Management Institutions. He is also member of inspection committees of Uttarakhand Technical University for Management and Engineering Institutes/ Colleges. He is actively involved in organising of MDPs/EDPs and is a resource person in such programmes. He has organised several seminars/ workshops and training programmes in the different areas of Management. Besides teaching and research, he has rich and vast experience of academic administration while holding various administrative positions in the institutions, he has worked with.



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