

# EVALUATION OF EQUITY MUTUAL FUNDS PERFORMANCE BEFORE AND DURING OUTBREAK OF COVID -19 PANDEMIC IN INDIA

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## Abstract

The outbreak of Covid – 19 Pandemic has deeply affected worldwide economic development. And economic growth of any country depends on the industry performance. This study helped to understand how mobilization of funds from household sector to corporate sector plays an important role in development of the industry as well as for economy. This study also provided performance evaluation of different equity mutual funds from different categories and their impact on investors mobilized saving or capital market participants considering different aspects such as sharpe ratio, beta and treynor ratio. This study covered the pre and post covid performance of mutual funds across different categories, namely; Small Cap, Mid Cap, Large Cap, Flexi cap, ELSS schemes, Thematic Schemes. It covers the return each fund has given over a period of time, their Sharpe ratio, treynor. At the same time, it provides analysis of additional return per unit of risk evidenced by specific mutual fund scheme. In this research paper an attempt is made on a comparative performance analysis of the growth-oriented equity diversified schemes for 5 months prior to outbreak of Covid-19 and 5 months during Covid-19 on the basis of return and risk evaluation. The analysis was achieved by assessing various financial tests like Average Return, Sharpe Ratio, Treynor Ratio, Standard Deviation and Beta. The used data is opening and closing NAVs for five months before Covid-19 effect and five months during Covid-19 pandemic. The source of data is the website of Association of Mutual Funds in India (AMFI). This study helped the mutual fund investor to comprehend the performance of different schemes of mutual funds prior period of covid, during covid and after the pandemic ended. For investors, mutual funds are one of the best investment options to get good returns. After the outbreak of Covid -19 Pandemic, global market went down and economy was affected badly.

**Key words:** Covid-19 pandemic, Net Assets Value, Sharpe Index, Treynor.

## INTRODUCTION

A mutual fund is a form of investment that allows investors to pool their money and purchase securities such as equity stocks, bonds, and short term or long-term debt. Through a mutual fund, risk can be minimized by portfolio diversification by selecting a variety of securities within each class or category.

The economic development of a country is greatly influenced by the mobilization of savings from households to businesses. In 1963, the Unit Trust of India, an initiative of the Government of India and the Reserve Bank of India, laid the foundation for the mutual fund industry in India.

The first phase was dominated by the UTI as the sole operator in the Indian mutual fund industry. The government introduced several tax exemptions in the UTI schemes in order to encourage the small investors to step up for investing. Within five years the industry of just six hundred crores turned out to be sixty thousand crores and it marked the entry of Indian mutual fund industry into next phase.

By the late 80s, the mutual fund industry had acquired its own identity, and many public sector banks had also entered to start their own mutual funds schemes. By 1991, when Indian economy was liberalized, Indian government allowed the entry of private players in mutual fund industry. (Walavalkar, & Garag, 2020)

In last 5 years, this industry had a significant growth as financial literacy has increased among Indians. The mutual fund industry in India has come a long way since its inception, still it accounts for only 7% of population being participating. As of May 2017, total Asset under management of the industry stands at ₹19 Lakhs Crore, and there are more than 60 million folios and about 44 fund houses operational in market. This report tries to see the performance of mutual funds prior to covid, during as well as after covid period within different categories. (Kumar 2019)

### **Need and Significance of the Study**

The outbreak of Covid – 19 Pandemic has deeply affected worldwide economic development. And economic growth of any country depends on the industry performance. This study helped to understand how mobilization of funds from household sector to corporate sector plays an important role in development of the industry as well as for economy. This study also provided performance evaluation of different equity mutual funds from different categories and their impact on investors mobilized saving or capital market participants considering different aspects such as sharpe ratio, beta and treynor ratio.

### **Statement of Problem**

Choosing a fund requires determining the investment style, investor objectives, past performance of the fund, its consistency, and many others. Comparing a fund to its peers gives you better ideas about its performance and fees. The impact of Covid 19 affected stock prices, which in turn affected mutual fund NAVs. This study will help clarify the impact of the Covid-19 pandemic on the mutual fund industry and its relative performance across different categories.

### **Scope of study**

This study covered the pre and post covid performance of mutual funds across different categories, namely; Small Cap, Mid Cap, Large Cap, Flexi cap, EISS schemes, Thematic Schemes. It covers the return each fund has given over a period of time, their sharpe ratio, treynor. At the same time, it provides analysis of additional return per unit of risk evidenced by specific mutual fund scheme.

### **LITERATURE REVIEW**

S. Manoj & B. Avinash (2020) investigated the “Evaluating the performance of Mutual Fund Schemes” they studied the performance of the Indian Mutual Funds period prior to covid 19, during covid 19 and after covid 19. They studied the performance of selected large cap mutual funds, they undertook the behavior of NAV of schemes pre, during and post covid. Their study consisted the study of volatility using sharpe, treynor, and tried to assess the behavior of various schemes.

Treynor (1966) evaluated the performance of 34 mutual funds, it considered MFs scheme for a period of 10 years, evaluated performance based on return to variability ratio. This study ranked the schemes based on the expense ratio. In the same study, an attempt was made to assess the prediction in the MFs schemes, but was not effective enough to reach any mechanism in predicating returns. Findings of this study were that small mutual fund schemes’ portfolio had a significant performance but due to their higher transaction cost, they were unable to attract investors. Various strategies by researchers traced the contribution of Treynor, Jensens and Sharpe methods to evaluate the mutual fund performance.

Ravindran (2003) studied the performance of 269 mutual funds by Sagar Rao Narayan & Madava, using risk-return analysis, Sharpe ratio, treynor’s and Fama’s. The study concluded that most mutual funds exceed investor expectations by offering better-than-expected returns. (Sathya, 2009) 23 mutual funds schemes were analyzed by the Sathya Debasish, offered by six private and the public sector MFs, supported the risk- return relationship. The analysis measured over a period of 13 years and has been made on the basis of beta, sharpe ratio, treynor and Jensen alpha. The study concluded that UTI and Franklin Templeton were the best performer and HDFC, LIC, AB sun Life, had shown belowaverage performance. <sup>[10]. [11]</sup>

G.S.S (2020) In the previous decade Indian Mutual Fund industry has outperformed the market since 2012, with the help of various statistical tool like standard deviation, r squared, alpha, beta and sharpe ratio had observed outperformance of mutual fund schemes over the benchmark. There was a comparative study analyzing the mutual fund system of Axis Fund and Kotak Fund. The study concluded that Axis' fund system is more disruptive in small cap equity systems and Kotak's fund system is effective in index funds.

Madhusudhan (1996) conducted a study to extent the awareness of mutual funds between investors to identify the reasons behind buying a specific fund. The study concluded that tax saving schemes and open ended mutual fund schemes, were more preferred than the growth or close ended schemes during a given market condition. Factors that came out of the influencing buying are safety of principal, capital appreciation and liquidity. And talking about awareness, so newspaper and magazines were the primary source of information, through which interested buyer understood about the selection of mutual fund schemes.

Pastor & Vorsatz (2020) conducted a study on “MF performance under covid 19” by Pastor and Vorsatz stated that during covid 19 active funds performed poorly. It was noted that around 58% of the funds performed below their benchmark index on an annualized basis of -2% to -11%. They also stated that some funds outperformed with an annualized rate of 14% in terms

of FTSE benchmark. And they also concluded that funds that were rate five star also outperformed the low one star rated by an annualized rate of around 23%.

Kanodia, & Khinchi (2017) investigated the mutual fund system of three models (Sharpe, Treynor, Jensen) for three years. In 2017, a study was conducted to understand the investor perception towards mutual fund. This study reviewed various paper that were published over past decade relating to growth, performance, investor perception, comparative growth. It concluded that investors focus on correlation between market returns and schemes' return.

Tripathy (2017) studied 30 mutual fund schemes were studied from various categories and applied statistical tools to determine the performance of various funds and selective skills of fund managers. This study concluded that a proper regulated mutual fund industry where fund managers were required to disclose the methods of stock picking increases the awareness of the investors.

Ojha (2017) studied of selected diversified mutual fund, suggested that mutual fund schemes are evaluated in terms of risk to return analysis. The average return of the 30% scheme has been shown to be higher and better, while the rest of the systems have shown lower returns. Also, in terms of standard deviation, the most common schemes are slightly less risky than the market.

Agarwal (2011) studied linkage between mutual fund and capital formation in growing economy. There has been significant growth in Indian Mutual Fund industry that attracted many domestic as well as foreign investors. Also significant growth in number of AMCs opened opportunity for investors in terms of safety, hedging, arbitrage and limited risk and also at the same time better results in relative to long term securities.

R. Anitha et al. (2011) evaluated the performance from 2005 to 2007 of public as well as private sector mutual fund schemes. Statistical tool like standard deviation, co-efficient of variance were considered under the study. The study stated that performance of most of the fund had shown volatility during the period of 2005 – 2007 and it was difficult to come out with one particular fund which could outperform the ongoing volatile consistency.

Selvam (2011) analyzed the risk-return relationship of the Indian MF program. This study showed that about one-third of the sample mutual fund scheme significant value, and the remaining showed no relationship between risk and return. Also, due to the consistent t-alpha values, the returns of most sample schemes did not differ significantly from the returns of the market, and the returns of small sample schemes were differing significantly from the returns of the market.

## **RESEARCH METHODOLOGY**

### **Research Design**

A descriptive research design has been used to understand the impact of covid 19 on Indian mutual fund industries performances before, during and after pandemic.

Therefore, a descriptive research design is used to understand the impact of covid 19 on Indian equity mutual funds.

## Population of the study

The secondary data of thirty mutual fund schemes under different categories from different fund was used. Data was collected from AMFI.

## Data Collection

Secondary data was collected from websites, details of which are as follows:

Data source of NAV from 1<sup>st</sup> of April 2018 to 31<sup>st</sup> January 2022. A 4-year period was covered. The period is pre, during and post covid.

The database of sharpe and treynor ratio was taken from AMFI.

Other relevant information is collected from books, magazines, magazines, and various websites.

## Data Analysis

Quantitative data was used and analyzed with descriptive statistics. Standard deviation, beta, treynor ratio were used to differentiate different funds with many statistical technique models were used to draw conclusion.

## ANALYSIS & INTERPRETATION

In the below table, the returns are mentioned of 4 periods, first is pre covid period from 1<sup>st</sup> april 2018 to 25<sup>th</sup> February 2020, next is during covid period divided into two phases, i.e., phase 1 (till 25<sup>th</sup> march, 2020) and phase 2 (till 10<sup>th</sup> July, 2020). And third period is of postcovid from 10<sup>th</sup> July 2020 to 31<sup>st</sup> January 2022.

**Table 1: Graphical comparison of Returns under different categories of 30 Mutual funds**

S No	Mutual Fund Name	From 1/4/2018 to 25/2/20	Covid Phase 1 (till 25th March, 2020)	Covid Phase 2 (till 10th July, 2020)	From 10/7/2020 to 31/1/22
<b>Large Cap</b>					
1	Axis Bluechip Fund Direct Plan Growth	18.03%	-20.29%	72.20%	31.68%
2	Kotak Bluechip Fund Direct Growth	10.35%	-26.18%	142.72%	38.26%
3	ICICI Prudential BlueChip Fund	7.92%	-26.21%	139.96%	39.34%
4	Mirae Asset Large Cap Fund	11.10%	-29.79%	200.26%	35.36%
5	SBI Bluechip Direct Plan	6.27%	-26.36%	134.41%	37.99%
<b>Mid Cap</b>					
6	Axis Midcap Direct Plan Growth	14.62%	-22.13%	99.60%	45.09%
7	PGMI India Midcap Opportunity Fund	2.90%	-29.25%	271.83%	69.87%
8	UTI Midcap Fund Direct Growth	-0.09%	-27.05%	149.05%	49.58%
9	HDFC Mid Cap Opportunities Direct	1.67%	-29.35%	141.92%	50.86%
10	TATA Midcap Growth Direct Plan	7.94%	-27.42%	127.14%	49.04%

<b>Small Cap</b>					
11	SBI Small Cap Fund Direct Growth	2.37%	-27.57%	146.50%	59.73%
12	Nippon India Small Cap Fund Direct	-1.92%	-33.16%	203.21%	76.96%
13	ICICI Prudential Smallcap Fund Direct	-0.61%	-29.52%	105.45%	75.78%
14	Quant Small Cap Fund Direct Plan Growth	-7.57%	-27.74%	283.50%	112.08%
15	HDFC Small Cap Fund Direct Growth	-5.09%	-32.17%	170.49%	70.19%
<b>Flexi Cap</b>					
16	Parag Parekh Flexi Cap Fund Direct Growth	13.35%	-23.61%	216.89%	43.88%
17	UTI Flexi Cap Fund Direct growth	8.16%	-21.83%	92.01%	41.48%
18	Axis Flexi Cap Fund Direct Growth	16.88%	-20.21%	70.24%	35.71%
19	DSP Flexi Cap Fund Direct Growth	13.15%	-26.54%	110.55%	39.80%
20	PGIM India Flexi Cap Fund Direct Growth	7.70%	-30.32%	307.59%	51.96%
<b>ELSS Funds</b>					
21	Mirae Asset Tax Saver Fund Direct Growth	12.49%	-30.47%	234.58%	44.56%
22	TATA India tax Saving Fund Direct Growth	8.88%	-26.75%	114.59%	41.55%
23	Axis Long Term Equity Direct Plan	14.15%	-23.82%	85.77%	34.09%
24	Canara Robeco Equity Tax Saver Direct growth	14.41%	-24.65%	113.33%	45.86%
25	Quant Tax Plan Direct growth	4.75%	-29.96%	304.05%	75.60%
<b>Sectoral/ Thematic</b>					
26	ICICI Prudential Technology Direct Plan	11.30%	-23.87%	150.90%	90.26%
27	Tata Digital India Fund Direct Growth	17.53%	-21.53%	115.32%	80.61%
28	Aditya Birla Sun Life Digital India Fund	14.31%	-23.87%	151.05%	77.26%
29	Nippon India Pharma Fund Direct Growth	11.68%	-14.85%	227.23%	30.33%
30	Quant infrastructure Fund Direct Growth	-0.17%	-35.22%	208.68%	97.52%

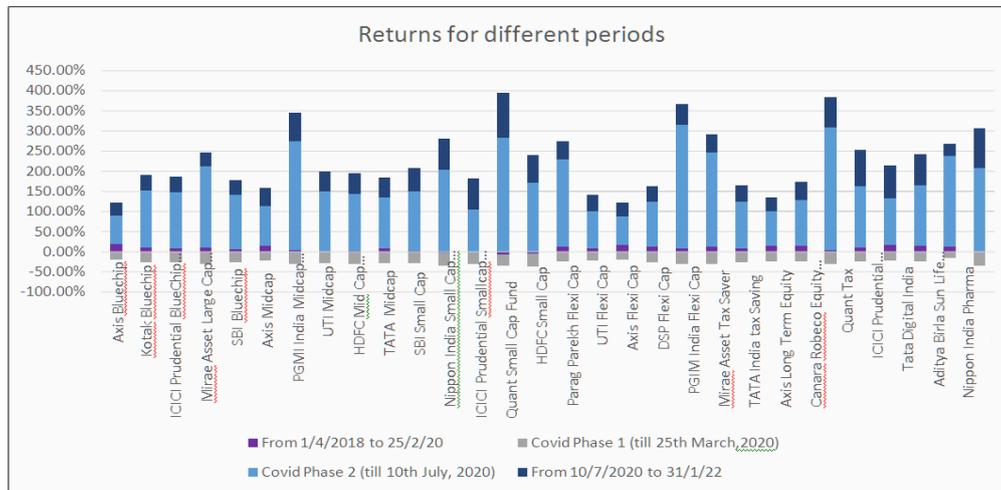


Figure 1: Graphical comparison of Returns under different categories of 30 Mutual funds for different periods.

### A. Interpretation

The above graphical representation showed various returns from 30 mutual funds schemes from different categories like Small Cap, Mid Cap, Large Cap, Flexi Cap, ELSS, Sectoral. Pre Covid periodis of 22 months pre Covid period. Returns are one of the crucial parameters considered while evaluating a mutual fund scheme. From table we can see that during pre-Covid period, returns are considerably moderate whereas during Covid period in phase 1 return fall to extent of negative returns and was significantly recovered by phase 2. Post Covid returns were more modest in comparison to pre Covid.

Table 2: Descriptive statistics of returns of 30mutual funds before covid

Pre Covid Period From 1/4/2018 to 25/2/20	
Mean	7.88%
Median	8.52%
Standard Deviation	6.89%
Variance	0.48%
Kurtosis	-58.09%
Skewness	-53.06%
Range	25.60%
Minimum	-7.57%
Maximum	18.03%
Count	30

**Table 3: Descriptive statistics of returns of 30mutual funds during Covid phase 1**

Covid Phase 1 (till 25th March,2020)	
Mean	-26.39%
Median	-26.65%
Standard Deviation	4.34%
Variance	0.19%
Kurtosis	53.94%
Skewness	39.24%
Range	20.37%
Minimum	-35.22%
Maximum	-14.85%
Count	30

**Table 4: Descriptive statistics of returns of 30mutual funds during Covid phase 2**

Covid Phase 2 (till 10th July,2020)	
Mean	163.03%
Median	144.61%
Standard Deviation	67.91%
Variance	46.11%
Kurtosis	-34.27%
Skewness	76.04%
Range	237.35%
Minimum	70.24%
Maximum	307.59%
Count	30

**Table 5: Descriptive statistics of returns of 30mutual funds post Covid**

Post Covid (From 10/7/2020 to 31/1/22)	
Mean	55.74%
Median	47.45%
Standard Deviation	21.59%
Variance	4.66%
Kurtosis	8.21%
Skewness	95.94%
Range	81.75%
Minimum	30.33%
Maximum	112.08%
Count	30

## B. Interpretation

The above tables show the descriptive statistics of 4 periods for 30 different mutual's funds. The time period considered for pre covid was of 22 months, for Covid phase 1 was one month, for covid phase 2 was 3.5 months and post covid is 18 months. Mean of pre covid is around 8%,

whereas in covid phase 1, it dropped significantly to -26% and then recovered tremendously by 163%. Post covid showed a constant return of 55%. Median of every period were somewhere around their mean, with 8.5% in pre covid, -26% in covid phase 1, 144% in covid phase 2 and 47.45% in post covid period. Standard deviation tells the spread of the observation around its mean. It was the highest in covid phase 2 with 67% followed by post covid period with 21%. It remained low during covid phase 1 with 4%, which tells, most of the mutual fund's returns fall under -30% to -22%. Variance tells the average variability of the observation from its mean, it was lowest during covid phase 1, and was highest during covid phase 2. Kurtosis tells, how heavily tails are. Pre covid and covid phase 2 has less observation in tails and are more centered around. Whereas during covid phase 1 and post covid, observations were more in tails of distribution. Only during pre-covid, data were skewed left, whereas during rest of the time they were skewed right. Range was maximum during covid phase 2 and was lowest during phase 1.

Lowest return was generated during phase 1 period and highest was in covid phase 2.

**Table 6: Analysis of variance of Pre and Post Covid Period**

Source of Variation	SS	df	MS
Between Groups	3.44	1.00	3.44
Within Groups	1.49	58.00	0.03
Total	4.93	59.00	

<b>F test statistics</b>	133.77
<b>P value</b>	1.08
<b>F critical value</b>	4.01

### C. Interpretation

H<sub>0</sub>: There is no difference among the return of selected mutual funds pre and post covid 19.

The above ANOVA table shows the value of F test statistics, P value and F critical Value. After comparing F test statistic with F critical value, if found that our F statistic value is much greater than F critical value and therefore we reject our null hypothesis. This hypothesis testing shows that variance of both periods differs from each other.

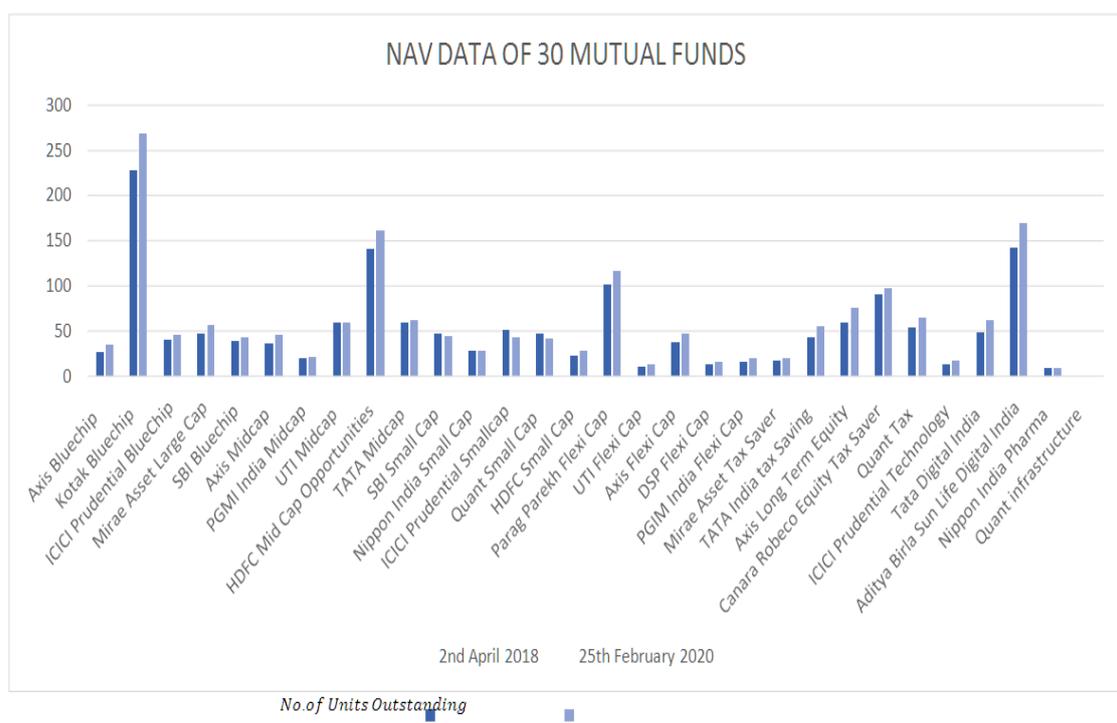
In the below table, the beginning and the ending NAV (net asset value) concerned to various funds categories and fund houses has been extracted from the published information. The period consists of pre covid 19 from 2<sup>nd</sup> April, 2018 to 25<sup>th</sup> February 2020.

**Table 7: NAV Data of Mutual Funds of different period**

S No.	Mutual Fund Name	Fund House Name	02-04-18	25-02-20
<b>Large Cap</b>				
1	Axis Bluechip Fund Direct Plan Growth	Axis MF	26.61	35.73
2	Kotak Bluechip Fund Direct Growth	Kotak Mahindra Mutual Funds	228.36	269.05
3	ICICI Prudential BlueChip Fund	ICICI Prudential	40.74	45.83
4	Mirae Asset Large Cap Fund	Mirae Asset	47.45	56.94
5	SBI Bluechip Direct Plan	SBI Mutual Fund	39.52	43.28
<b>Mid Cap</b>				
6	Axis Midcap Direct Plan Growth	Axis MF	36.05	45.71
7	PGMI India Midcap Opportunity Fund	PGIM India Mutual Fund	20.10	21.75
8	UTI Midcap Fund Direct Growth	UTI AMC	59.16	58.17
9	HDFC Mid Cap Opportunities Direct	HDFC AMC	59.10	59.85
10	TATA Midcap Growth Direct Plan	TATA Mutal Fund	141.48	160.87
<b>Small Cap</b>				
11	SBI Small Cap Fund Direct Growth	SBI Mutual Fund	59.69	61.60
12	Nippon India Small Cap Fund Direct	Nippon India Mutual Fund	46.60	44.22
13	ICICI Prudential Smallcap Fund Direct	ICICI Prudential	28.82	28.26
14	Quant Small Cap Fund Direct Plan Growth	Quant Mutual Fund	51.67	43.76
15	HDFC Small Cap Fund Direct Growth	HDFC AMC	47.39	42.25
<b>Flexi Cap</b>				
16	Parag Parekh Flexi Cap Fund Direct Growth	PPFAS Mutual Fund	23.11	28.38
17	UTI Flexi Cap Fund Direct growth	UTI AMC	101.58	116.61
18	Axis Flexi Cap Fund Direct Growth	Axis MF	10.27	13.54
19	DSP Flexi Cap Fund Direct Growth	DSP Mutual Fund	38.28	47.45
20	PGIM India Flexi Cap Fund Direct Growth	PGIM India Mutual Fund	13.36	15.58
<b>ELSS Funds</b>				
21	Mirae Asset Tax Saver Fund Direct Growth	Mirae Asset	16.35	20.15
22	TATA India tax Saving Fund Direct Growth	TATA Mutal Fund	17.85	20.52
23	Axis Long Term Equity Direct Plan	Axis MF	43.73	54.87
24	Canara Robeco Equity Tax Saver Direct growth	Canara Robeco Mutual Fund	60.08	75.99
25	Quant Tax Plan Direct growth	Quant Mutual Fund	91.02	97.75
<b>Sectoral/ Thematic</b>				
26	ICICI Prudential Technology Direct Plan	ICICI Prudential	53.64	65.25
27	Tata Digital India Fund Direct Growth	TATA Mutal Fund	12.78	17.21
28	Aditya Birla Sun Life Digital India Fund	AB AMC	48.93	61.92
29	Nippon India Pharma Fund Direct Growth	Nippon India Mutual Fund	142.33	169.73
30	Quant infrastructure Fund Direct Growth	Quant Mutual Fund	9.15	8.93

$$\text{NAV} = \frac{\text{Total Market value of fund}}{\text{No. of Units Outstanding}}$$

**Figure 2: Graphical comparison of NAV under different categories of 30 Mutual funds from the above mutual fund table**



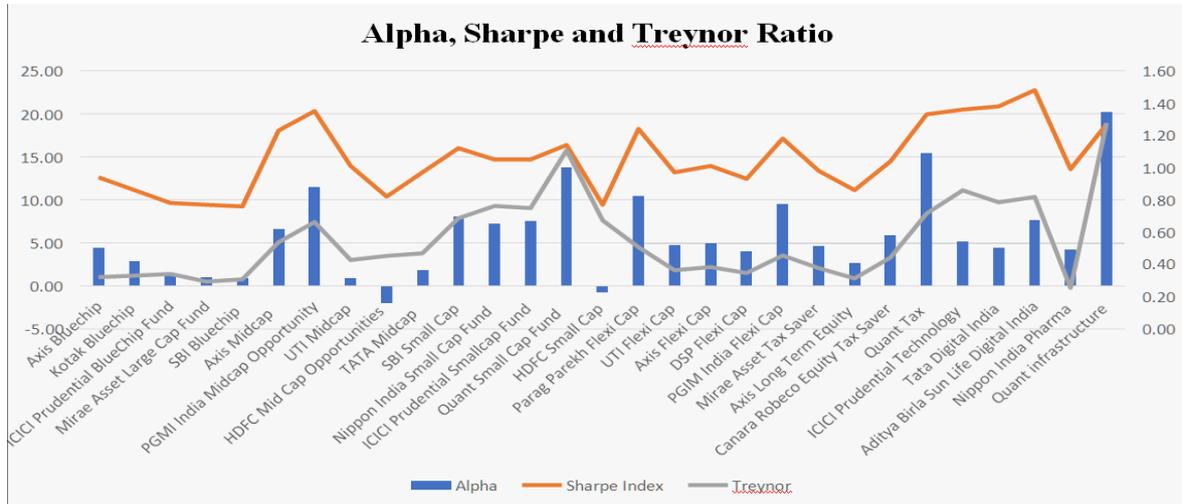
**D. Interpretation**

The above graphical representation shows various NAV from 30 mutual funds schemes from different categories like Large Cap, Mid Cap, Small Cap, Flexi Cap, ELSS, Sectoral. The period is of 22 months pre covid period. Kotak Bluechip Fund Direct Scheme has the largest NAV of 228 in April 2018 and NAV of 269 as of 25<sup>th</sup> February 2020. Nippon India Pharma Fund has the second largest followed by TATA Midcap Growth fund. Smallest NAV is of Quant infrastructure fund with 9.15, 2<sup>nd</sup> lowest is of Axis Flexi Cap fund followed by TATA Digital Fund. NAV cannot be considered as a parameter to evaluate performance of different funds because it is the face value of a mutual fund which is calculated on the basis of number of units outstanding.

**Table 8: Different variables of 30 Mutual Funds**

Mutual Fund Name	Alpha	Beta	Sharpe Index	Treynor
<b>Large Cap</b>				
Axis Bluechip	4.40	0.77	0.94	0.32
Kotak Bluechip	2.89	0.95	0.86	0.33
ICICI Prudential BlueChip	1.29	0.95	0.78	0.34
Mirae Asset Large Cap	0.98	0.97	0.77	0.29
SBI Bluechip	0.90	1.01	0.76	0.31
<b>Mid Cap</b>				
Axis Midcap	6.64	0.71	1.23	0.54
PGMI India Midcap Fund	11.44	0.95	1.35	0.66
UTI Midcap	0.90	1.00	1.01	0.43
HDFC Mid Cap	-2.00	0.97	0.82	0.45
TATA Midcap	1.84	0.90	0.97	0.47
<b>Small Cap</b>				
SBI Small Cap	8.04	0.77	1.12	0.69
Nippon India Small Cap	7.28	0.92	1.05	0.76
ICICI Prudential Smallcap	7.57	0.92	1.05	0.75
Quant Small Cap Fund	13.71	0.95	1.14	1.11
HDFC Small Cap	-0.77	0.94	0.77	0.67
<b>Flexi Cap</b>				
Parag Parekh Flexi Cap	10.41	0.73	1.24	0.51
UTI Flexi Cap	4.70	0.95	0.97	0.36
Axis Flexi Cap	4.98	0.75	1.01	0.38
DSP Flexi Cap	3.97	0.95	0.93	0.35
PGIM India Flexi Cap	9.53	0.99	1.18	0.46
<b>ELSS Funds</b>				
Mirae Asset Tax Saver	4.58	1.00	0.98	0.38
TATA India tax Saving	-	-	-	
Axis Long Term Equity	2.68	0.87	0.86	0.31
Canara Robeco Equity Tax Saver	5.89	0.88	1.04	0.44
Quant Tax	15.42	0.96	1.33	0.72
<b>Sectoral/ Thematic</b>				
ICICI Prudential Technology	5.13	0.97	1.36	0.86
Tata Digital India	4.40	0.94	1.38	0.78
Aditya Birla Sun Life Digital India Fund	7.66	0.86	1.48	0.82
Nippon India Pharma	4.26	0.92	0.99	0.25
Quant infrastructure	20.24	0.71	1.27	1.28

Figure 3: Graphical presentation of Alpha, Sharpe and Treynor Ratio



**E. Interpretation**

The above graphical representation shows Alpha, Sharpe and Treynor of different mutual funds. Alpha is the excess return generated in relation to its benchmark index. The higher the alpha, the better returns. Quant Infrastructure Mutual fund have the highest alpha value with 20.24 followed by Quant tax saving fund with 15.42. Beta value is same for most the mutual funds. A positive covariance can be seen between alpha value and sharpe index. Sharpe ratio tells the excess return generated from risk free rate in relation to risk of the fund. The higher the sharpe ratio, the better the fund is. Aditya Birla Sun life Digital India fund has the highest sharpe, followed by the Tata Digital India fund. Treynor ratio tells the excess return from risk free rate in relation to beta of the fund. Kotak Bluechip fund has the highest treynor ratio with 301 followed by Nippon India and Tata midcap Fund.

**CONCLUSION**

This study helped the mutual fund investor to comprehend the performance of different schemes of mutual funds prior period of covid, during covid and after the pandemic ended. For investors, mutual funds are one of the best investment options to get good returns. After the outbreak of Covid -19 Pandemic, global market went down and economy was affected badly. This directly affected the NAV of equity mutual funds. The NAVs of all schemes went down gradually and investor’s income level was declined.

In the pre covid period there was an average return of 8% with a standard deviation of 7% and were very aligned to market returns. During Covid period, in phase 1 where country was under strict lockdown, mutual funds recorded a significant decline. And average return for that period was -26% with a standard deviation of 4%, during that period market were corrected by more than 30%. In the covid phase 2, when restrictions were lifted, there was a significant recovery with an average of 160% though standard deviation was also too high of 67%.

After the phase 2 of covid period, when economy was showing sign of recovery, equity market also showed significant growth and was same reflected in mutual fund scheme where average return was 55% with a standard deviation of 20%.

Covid Pandemic provided a jolt to equity market and 15 – 18 months after the phase 1 of covid 19, equity market went high off and similarly equity mutual funds showed significant growth.

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