PORTFOLIO PERFORMANCE EVALUATION OF SELECT LARGE CAP, MID CAP AND SMALL CAP FUND DURING THE COVID-19 PANDEMIC

DISSERTATION SUBMITTED

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By

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UNDER THE GUIDANCE OF

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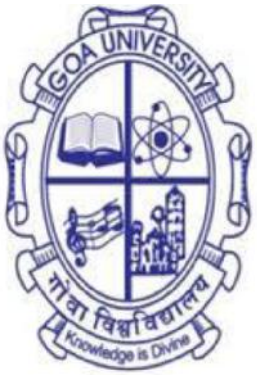

GOA BUSINESS SCHOOL

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DECLARATION

I the undersigned, SANDESHA SANTOSH KOLE, do hereby declare that the project entitled, “Portfolio Performance Evaluation Of Select Large Cap, Mid Cap And Small Cap Fund During The Covid-19 Pandemic” has been composed by me under the guidance of DR. K. B. SUBHASH towards partial fulfilment of the degree of Master of Commerce, and has not previously formed the basis for the award of any degree or diploma or any other similar title in Goa University or elsewhere

DATE: 10/07/2021

PLACE: GOA UNIVERSITY

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CERTIFICATE

This is to certify that this dissertation entitle "*Portfolio Performance Evaluation Of Select Large Cap, Mid Cap And Small Cap Fund During The Covid-19 Pandemic*" is the record work done by a candidate herself during the period of her study, under my guidance, and to the best of my knowledge it has not previously formed the award of any degree or diploma in Goa University or elsewhere

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CHAPTER 1: INTRODUCTION

1.1 Introduction

The Indian Financial System is one of the most important aspects that plays a vital role in economic development of our country. It enables to achieve the efficient allocation of funds. Financial service is a part of Indian financial system that provides different types of finance. This economic service is provided by the finance industry that in turn encourage both savings and investment. With the advent of mutual fund industry in the year 1963 with the formation of Unit Trust of India (UTI) the Indian retail investor were available with the most viable investment avenue as it offered option of professionally managed investment scheme. Mutual fund pools money from many investors and invests the money in a portfolio consisting of securities such as stocks, bonds, and short-term debt. The first open-end mutual fund was launched on March 21, 1924, as the Massachusetts Investors Trust. In India, the first introduction of a mutual fund occurred in 1963, when the Government of India launched Unit Trust of India (UTI). The Association of Mutual Funds in India (AMFI), the association of all the Asset Management Companies of SEBI registered mutual funds in India, was incorporated on August 22, 1995, as a non-profit organisation. As of now, 43 Asset Management Companies that are registered with SEBI, are its members. AMFI is dedicated to developing the Indian Mutual Fund Industry on professional, healthy and ethical lines. It also enhances and maintain standards in all areas with a view to protecting and promoting the interests of mutual funds and their unit holders. The history of mutual funds in India can be broadly divided into four distinct phases. The First Phase is from 1964 to 1987, the Unit Trust of India (UTI) was set up by the Reserve Bank of India and functioned under the Regulatory and administrative control of the Reserve Bank of India. In 1978, UTI was de-linked from the RBI and the Industrial Development Bank of India (IDBI) took over the regulatory and administrative control in place of RBI. Second Phase was from 1987 to 1993 where there was entry of Public Sector Funds and in the third phase which was from 1993 to 2003 Private Sector Funds made their entry with a dawn of new era in the Indian mutual fund industry, giving the Indian investors a wider choice of fund families. The fourth Phase since February 2003, with recent mergers taking place among different private sector funds, the mutual fund industry has entered its current phase of consolidation and growth. The economic disruption caused due to the COVID-19 pandemic is devastating; as many of the investor has lost their

money in the financial market. Amid the COVID-19 pandemic, the investors tend to keep the hope in the mutual fund investment. The participation of all people, both as investors and the public in investment activities, is expected to contribute to economic recovery from the implementation of open innovation, which provides strategic steps and the best solutions during the COVID-19 pandemic (Immas Nurhayati et al., 2021).

1.2 Background of Mutual Fund

A mutual fund is a financial intermediary that pools the savings of investors for collective investment in a diversified portfolio of securities. A fund is “mutual” as all of its returns, minus its expenses, are shared by the fund’s investors. The Securities and Exchange Board of India (Mutual Funds) Regulations, 1996 defines a mutual fund as a ‘a fund established in the form of a trust to raise money through the sale of units to the public or a section of the public under one or more schemes for investing in securities, including money market instruments’.

According to the above definition, a mutual fund in India can raise resources through sale of units to the public. It can be set up in the form of a Trust under the Indian Trust Act.

1.3 Overview of impact of covid-19 pandemic on mutual fund in India

Inflows into India's equity mutual funds slowed to a trickle in June 2020 even as stock markets recovered sharply, as investors worried about the impact of the new coronavirus on their livelihood chose to book profits and stay away. Net flows into mutual funds that invest in equity dropped more than 95 per cent to ₹ 241 crore in June 2020 from ₹ 5,257 crore in May 2020, showed in data published by the Association of Mutual Funds in India (AMFI). The stock markets plummeted in March 2020 but have since recovered more than 40 per cent, driven by a flush of liquidity as central banks around the world cut rates to counter a coronavirus-inflicted economic slowdown. But investors are worried about job losses and salary cuts hurting their income after India's lockdown - one of the world's strictest - ground businesses to a halt. That also led to a drop in inflows into Systematic Investment Plans (SIPs), which allow an investor to invest a fixed amount regularly in mutual fund schemes, to ₹ 7,927 crore in June 2020 from 8,123 crore in May 2020.

Investors are also concerned about soaring new infections as the economy opens up, the government's lukewarm economic stimulus and grim economic forecasts.

1.4 Literature Review

In the present research, the literature from the year 2011-2020 has been studied and in total 20 research papers were referred for the study. In order to collect the research papers for the review, detailed search, with respect to Indian research papers, were carried out using the available databases like, Elsevier, Indian Journal, J-Gate, JSTOR and Google Scholars. After that research papers were selected which were directly associated with the Covid-19 impact on performance of mutual fund. There was limited literature which was found on the performance of mutual funds as how investors are affected in the period prior to Covid-19 pandemic as well as during the outbreak of Covid-19 pandemic. The earlier studies have considered mostly one category of mutual fund scheme whereas this study considers three i.e. under the category of Large Cap, Mid Cap and Small Cap fund. Detailed Literature Review is given in Chapter 2.

1.5 Research Questions and Objectives.

Intention of this study is to appraising the performance of mutual funds from various selected mutual fund houses under the category of Large Cap, Mid Cap and Small Cap fund in India.

Based on the detailed Literature Review given in Chapter 2, where research gap was clearly identified, the following Research Questions (RQs) and related Objectives were developed, followed with the related Objectives (O) are develop for further analysis.

RQ1: How investors are affected in the period prior to Covid-19 pandemic as well as during the outbreak of Covid-19 pandemic in terms of their risk and returns on their investments?
O1: To analyse the risk and return profile of select mutual fund schemes in whole, pre and during Covid-19 pandemic.

RQ2: Which mutual fund scheme performance is better than others among the select based on ranks?
O2: To evaluate the performance of select mutual fund schemes by using Sharpe Ratio, Treynor Ratio and Jensen Ratio in whole, pre and during Covid-19 pandemic.

RQ3: Whether any mutual fund scheme among the select outperformed or underperformed the market?

O3: To evaluate Outperformance or Underperformance of select mutual fund schemes during in whole, pre and during Covid-19 pandemic.

1.6 Methodology

This study mainly depend on secondary data. To examine the Large Cap, Mid Cap and Small Cap fund mutual fund schemes performance, based on crisil ranking that is 10 Large Cap, 10 Mid Cap and 10 Small Cap fund mutual fund open ended schemes. The performance evaluated of sampled mutual fund schemes with the help of Net Asset Value (NAV). The needed daily NAV for sampled mutual funds is extracted from Association of Mutual Funds in India (AMFI) website (www.amfi.com). A risk free rate asset has zero variability of returns. In this study 3-Month Bond Yield Treasury bills have been taken as a risk free rate which is collected. Data of daily closing price for the benchmark index (NSE-Nifty) is collected from the official web site of National Stock Exchange of India. The study covers a period of 2 years i.e. 1 April 2019 to 28 February 2021 i.e. pre and during Covid-19 pandemic. NSE-Nifty is used as market portfolio. In this study 3- Month Government Bond Yield have been used as risk free.

O1: To analyse the risk and return profile of select mutual fund schemes in whole, pre and during Covid-19 pandemic.

Whole Period of study : 1 April 2019 to 28 Feb 2021

Pre period : 1 April 2019 to 24 March 2020

During period : 25 March 2020 to 28 Feb 2021

Tools and techniques

Standard Deviation, Average Return and Beta

O2: To evaluate the performance of select mutual fund schemes by using Sharpe Ratio, Treynor Ratio and Jensen Ratio in whole, pre and during Covid-19 pandemic.

Whole Period of study : 1 April 2019 to 28 Feb 2021

Pre period : 1 April 2019 to 24 March 2020

During period : 25 March 2020 to 28 Feb 2021

Tools and techniques

Sharpe Ratio, Treynor Ratio and Jensen Ratio

O3: To evaluate Outperformance or Underperformance of select mutual fund schemes during in whole, pre and during Covid-19 pandemic.

Whole Period of study : 1 April 2019 to 28 Feb 2021

Pre period : 1 April 2019 to 24 March 2020

During period : 25 March 2020 to 28 Feb 2021

Tools and techniques

Return on market and Return on portfolio (CAPM)

1.7 Chapterisation scheme

The entire research is divided into four chapters,

Chapter1: Introduction

This chapter includes introduction, background of mutual fund, overview of mutual and covid-19 pandemic, literature review, research gap, objectives of the study, research questions for study and Methodology.

Chapter2: Literature Review

This chapter deals with evaluating the existing literature available on mutual fund performance evaluation. This chapter is divided into 2 section. The first section starts with the mutual fund performance evaluation studies and then mutual fund performance evaluation during covid-19.

Chapter 3: Research Methodology

This chapter gives a brief introduction of the methodology followed for the study and the tools and techniques that have been used for the purpose of the study. It also provides the details of period of study use study for each objective.

Chapter 4: Data Analysis and Results

This chapter deal with data analysis performed for all three periods that is for whole, pre and during Covid-19 pandemic period. For RQ1 to know about how investors are affected in the period prior to Covid-19 pandemic as well as during the outbreak of Covid-19 pandemic in terms of their risk and returns standard deviation, beta and average return were used. For RQ2, to know which mutual fund scheme performance is better than others among the select based on ranks Sharpe ratio, Treynor Ratio and Jensen Ratio was used. For RQ3, to know whether any mutual fund scheme among the select outperformed or underperformed the market, Return on portfolio as per CAPM and Return on Market were used.

Chapter 5: Findings, Summary and Conclusion

The last chapter includes the introduction, findings, summary and conclusion for the above study done. Also, suggestions and scope for further research is included.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

In the present research, the literature from the year 2011 to 2020 has been studied and in total 20 research papers were referred for the study. In order to collect the research papers for the review, detailed search, with respect to Indian research papers, were carried out using the available databases like, Elsevier, Indian Journal, J-Gate, JSTOR and Google Scholars. After that research papers were selected which were directly associated with the Covid-19 impact on performance of mutual fund. This chapter deals with evaluating the existing literature available on mutual fund performance evaluation. This chapter is divided into two section.

2.2 Earlier Research Works

1. Syed Kumail Abbas Rizvi et al. (2020) assessed performance and investment styles of European funds during the evolution of Covid-19. They considered the period between January and May 2020 and categorized the spread of contagion in three phases. Their results document that Social Entrepreneurship funds demonstrated positive returns across the three phases, while most of the other subcategories plunged into negative zone. Their findings on style analysis suggested that fund managers had been drifting from high-risk option to low risk in terms of size and investment strategy. They also found that there had been a switch from high risk to relatively less sensitive sectors and a transition of investment from countries with higher to those with lower number of cases.

2. Lubos Pastor and M. Blair Vorsatz (2020) analysed of the performance and flows of U.S. actively-managed equity mutual funds during the COVID-19 crisis of 2020. They found that the most active funds underperform passive benchmarks during the crisis. They also noticed that funds with high sustainability ratings perform well, as do funds with high star ratings. Fund out ows surpass pre-crisis trends, but not dramatically. They concluded that investors favor funds that apply exclusion criteria and funds with high sustainability ratings, especially environmental ones during this major crisis.

3. Sangisetti Manoj and Bondu Avinasha (2020) conducted 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. They used various financial tests for their analysis 12 schemes such as Average Return, Sharpe Ratio, Treynor Ratio, Standard Deviation and Beta. They found that most of the investors were satisfied with other all fund returns with different satisfaction levels. Authors suggested that fall of stock markets, negative market moments, lack of savings and thinking of insecurity about their investments and negative sentiments of majority participants in the capital market might be the reasons for the negative returns.

4. Syed Husain Ashraf and Dhanraj Sharma (2014) analysed the performance of equity mutual funds industry against risk free rate and benchmarks return over the five years period starting from April 2007 to March 2012. For the analysis purpose authors considered 10 growths oriented- open ended- equity mutual fund schemes belong to 5 public and 2 private mutual fund companies. Techniques used by the authors were risk-return analysis, Coefficient of Variation, Treynor's ratio, Sharp's ratio, Jensen's measure, Fama's measure and Regression analysis. They found through risk return analysis that out of 10 schemes 3 have underperform the market, 7 are found to have lower total risk than the market and all the schemes have given returns higher than risk free rates. The result of regression analysis suggests that benchmark market return index has impact on mutual fund return.

5. Kalpesh P Prajapati and Mahesh K Patel, (2012) in their paper titled "comparative study on performance evaluation of mutual fund schemes of Indian companies" carried out performance evaluation of Indian mutual funds through relative performance index, risk-return analysis, Treynor's ratio, Sharp's ratio, Sharp's measure, Jensen's measure, and Fama's measure. The data used was daily closing NAVs. They collected data from the website of Association of Mutual Funds in India (AMFI). They conducted study for the period of five years i.e. from 1st January 2007 to 31st December, 2011. Five equity diversified mutual fund schemes from five selected AMCs were selected randomly. Their results of performance measures suggested that most of the mutual fund have given positive return during 2007 to 2011.

6. N. Bhagyasree and B. Kishori, (2016) in their paper titled "A Study on Performance Evaluation of Mutual Funds Schemes in India" investigated the performance of open-ended, growth-oriented equity schemes for the period of four year i.e. from April 2011 to March 2015 of transition economy. They used daily closing NAV of different schemes to calculate the returns from the fund schemes. The historical performance of the selected schemes were evaluated on the basis of Sharpe, Treynor, and Jensen's measure. The study revealed that 14 out of 30 mutual fund schemes had outperformed the benchmark return. Their study revealed that the schemes were facing the diversification problem the reason schemes which had underperformed. In their study, the Sharpe ratio was positive for all schemes which showed that funds were providing returns greater than risk free rate. They found that 19 out of 30 schemes were showed positive alpha which indicated superior performance of the schemes.

7. Qamruzzaman (2014) in the paper titled "Comparative Study on Performance Evaluation of Mutual Fund Schemes in Bangladesh: An Analysis of Monthly Returns" evaluate the performance of 32 growth oriented mutual funds on the basis of monthly returns compared to benchmark returns. For this purpose, author had employed Treynor ratio, Sharpe ratio, and Jensen's alpha. The study found positive monthly return and upward trend in comparison to market return. The author found similar performance indication for different risk return measures with exception of few mutual funds scheme due to market return in inconsistent with return from mutual funds i.e., negative market return. The researcher concluded that, the growth oriented mutual funds have not performed better. The researcher suggested Growth oriented mutual funds are expected to offer the advantages of diversification, market timing and selectivity. The author further suggested that for broadening the depth of the capital market, it is necessary to float more mutual funds since these are good instruments of mobilizing savings and providing investment opportunities to small savers.

8. R. Nanadhagopal et al., (2012) in their paper titled "a study on the performance Evaluation of mutual funds in India (equity, income and gilt funds)" analysed performance of three categories such as Equity, Income and Gilt Funds. They selected four mutual fund schemes from each category for evaluating their performance during the period 2006-2009. They used rank correlation to figure out the interdependence between the funds. They suggested the risk averse investors could invest in gilt funds

as it showed better performance even in the recession period of the year 2008 and the investors who aim for high returns can invest in equity diversified schemes.

9. Rizwan Ali et al., (2011) in their paper titled "performance evaluation of mutual funds" finding out the role of mutual fund investment in Pakistan" they tried to find out the factors effecting the investment in mutual funds. And also measured the performance of mutual funds through the models which are used worldwide to evaluate the investment tendency in the area of mutual funds through portfolio risk or return. They suggested that mutual funds in Pakistan are able to add more value either Conventional or Islamic.

10. Geeta Rani and Vijay Singh Hooda (2017) in their paper titled "performance evaluation of mutual fund schemes: a study of selected topper schemes" evaluated ten mutual fund schemes performance which were ranked first by CRISIL during March 2017. They used monthly average NAV's (Net Asset Value) of the selected schemes. They conducted study for the period of one year i.e. from April 2016 to March 2017. To analyse the performance of selected funds' schemes, mean returns and their standard deviations were used and then Sharpe's Ratio, Jensen's Ratio and Treynor's Ratio were used. They found that all the selected funds outperformed the market & indicated superior risk adjusted performance. Their study also revealed that during the month of November 2016 which is the period of demonetization move, all schemes have negative return irrespective of type of schemes.

11. Sunil M. Adhav, and Pratap M.Chauhan, (2015) in their paper titled "comparative study of mutual funds of selected Indian companies" conducted a studied on comparative performance of mutual funds of selected Indian companies. Their study focus on mutual fund schemes of selected Indian companies comprising Equity, Debt and Hybrid Schemes for the last five years (2009-10 -2013-14). The total of 390 schemes comprising of 178 equity mutual funds, 138 debt schemes and 74 hybrid schemes were selected and were compared with their respective benchmark by the authors for their study. The performance of selected Indian companies' mutual fund was analysed with the help of Return, risk (standard Deviation), and Sharpe ratio. They concluded that Equity, Debt and Hybrid mutual funds have performed better than their benchmark and

generated better returns for the investors of equity mutual funds during 2009-10 to 2013-14.

12. Tapan Kumar Samanta (2019) investigated the performance of the open ended, growth oriented, equity diversified schemes on the basis of return and risk evaluation. A sample of ten mutual fund schemes comprising of all equity diversified large cap funds on random basis for a period starting from March 2012 to march 2016 was used by the author. For analysis author had used various financial tests like Average Return, Standard Deviation, Beta, Coefficient of Determination (R2), Alpha, Sharpe Ratio and Treynor Ratio. The author found from the analysis that majority of funds selected for the study had outperformed under Sharpe Ratio as well as Treynor Ratio.

13. Masiperiyannan and Mohanamani. P, (2016) in their paper titled "performance evaluation of selected open – ended mutual funds in India" analysed the performance of ten open ended mutual fund schemes which were selected based on CRISIL ranking 2015 for a period from April 01, 2010 to March 31, 2015. For analysis, authors had used various financial tests like Average Return, Beta, Coefficient of Determination (R2), Sharpe Ratio, Treynor Ratio, Fama's net selectivity and Treynor Mauzy Model. They found that the investors who have invested in the selected mutual funds have earned the market return as the lower level and the investors who have invested in the Kotak 50 Growth fund have earned the higher return than the market return.

14. Arpita Gurbaxani and Rajani Gupte (2021) studied the impact of COVID-19 on individuals' financial transactions in Madhya Pradesh (MP) COVID-19 pandemic. They conducted sample survey to determine the impact on investment and financial decisions of individuals in small towns in developing nations. They studied the relationship between the COVID-19 pandemic and change in investment decisions of individuals with respect to SIPs. They found significant association between measures taken to prevent the spread of COVID-19 (such as lockdown and travel restrictions) and individual income; such preventive measures directly impacted savings and investment behaviour. They also found that the socioeconomic effects of the COVID-19 outbreak at the micro-level and may enable financial institutions and individuals to better handle such situations in future.

15. Amit Sundaram (2020) studied the sentiment of Investors on Mutual Funds in the Indian Market with Assets Under Management (AUM), a predominant performance gradient for Mutual Funds, as a proxy to analyse the impact of news articles related to the Mutual Fund Industry amid the COVID-19 Outbreak. During the four phases of the lockdown stating from March of 2020 and ending on the last day of May 2020 the author found in his study a significant reduction in Assets Under Management. The author also found that as the lockdown was lifted, several fiscal stimulus measures were implemented by the Government in June, which uplifted investor sentiments, as a result of which sentiment scores increased, moving to the positive in the month of July. Thus, in his study sentiment scores over the months considered highly correlated with AUM values and helped in obtaining a linear model relating the two variables.

16. Nawazish Mirza (2021) investigated the impact of human capital efficiency (HCE) on equity funds' performance during three stages of the COVID-19 pandemic. They collected data for 799 open-ended equity funds across five EU countries and ranked them in five categories of HCE and compare their risk-adjusted performance across these categories. Their results suggested that during the COVID-19 outbreak, the equity funds that were ranked higher in HCE outperformed their counterparts. They also suggested that fund managers should invest in human capital to improve funds' coping ability and resilience during periods of extreme stress.

17. Kotishwar, A. (2020) Investigated the impact of covid-19 virus spread on the stock markets. Their study had considered the positive cases growth of six countries (USA, Spain, France, Italy, China and India), which were affected worst from 11th, March to April of 2020 (WHO declared the COVID 19 as pandemic on 11 March 2020). The authors in their study applied the VECM to know the relationship and observed that the Covid-19 having the significant negative long run relationship with all the selected countries stock indices. They also used CAAR model and observed that all the selected countries indices had positively reacted more in post period compared with the pre period. They stated that the investors were considering the long-term strategy and investing at every low level.

18. Debakshi Bora and Daisy Basistha (2020) empirically investigated the impact of COVID-19 on the Indian stock market by sing daily closing prices of indices such as

Nifty and Sensex. They examined the volatility of these indices over the period 3rd September 2019 to 10th July 2020. Further, their study has attempted to make a comparative analysis of the return of the stock market in pre-COVID-19 and during the COVID19 situation. GARCH model was used to capture the volatility of the indices. The author found that the stock market in India had experienced volatility during the pandemic period. While comparing the results with that of the pre-COVID-19 period, they found that return on the indices is higher in the pre-COVID-19 period than during COVID-19. They noticed that the return of both the indices reached the bottom line during the first lockdown period, which is from 24th March to 6th April.

19. Collins C Ngwakwe (2020) in their paper title "Effect of COVID-19 Pandemic on Global Stock Market Values: A Differential Analysis" investigated effect of coronavirus pandemic on select global stock indexes (SSE Composite Index [China], Euronext 100 [Europe], Dow Jones Industrial Average [United States of America]). They gathered data on stock value performance for fifty days before and fifty days within the Coronavirus epidemic; the author analysed data using the paired t-test of difference in mean stock values at an alpha level of 0.05(5%). They found that COVID-19 pandemic had different effects on the stock markets. Dow Jones Industrial Average showed a significant reduction in mean stock value during the coronavirus period, Chinese Stock Exchange Composite Index experienced a significant increase in mean stock values during epidemic higher than before the epidemic.

20. Velmurugan Palaniappan Shanmugam and K. A. Ashique Ali (2021) analyzed the changes in the mutual fund industry in India due to the virus outbreak from December 2019 to May 2020. They took a sample of 25 equity-oriented direct growth funds for their study to analyze their performance along with the sector-wise differences. Their results showed that the value of majority of the funds had plunged, while some funds had rebounded during the period.

2.3 Research Gap

There was limited literature which was found on the performance of mutual funds as how investors are affected in the period prior to Covid-19 pandemic as well as during the outbreak of Covid-19 pandemic. The earlier studies have considered mostly one category of mutual fund scheme whereas this study considers three i.e. under the category of Large Cap, Mid Cap and Small Cap fund.

2.4 Summary

The outbreak of Covid-19 has caused economic disruption in developed as well as emerging countries. The literature available suggest the fund managers have shifted the investment from risky to the safer investment option (Syed Kumail Abbas Rizvi et al.; 2020). However, there are studies that shows the mix impact on the returns in the foreign markets. (Velmurugan Palaniappan Shanmugam and K. A. Ashique Ali; 2021) The studies have also found the mix results in terms of mutual fund performance during the Covid-19 pandemic. From the literature reviewed, it is noticed that performance evaluation ratios are used to evaluate the performance of mutual fund schemes (Sangisetti Manoj and Bondu Avinasha; 2020). The available literature suggest that the split of whole study period into pre and during, which is adopted in this study (Debakshi Bora and Daisy Basistha; 2020). The funds coping ability depends on the type of mutual fund scheme in which investment is made during such extreme situations. (Amit Sundaram ;2020) Investor's sentiments are also important and have a great impact on the assets under management.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Research methodology

Research methodology is the systematic, theoretical analysis of the methods applied to a field of study. It comprises the theoretical analysis of the body of methods and principles associated with a branch of knowledge.

This study mainly depend on secondary data. To examine the Large Cap, Mid Cap and Small Cap fund mutual fund schemes performance, based on crisil ranking that is 10 Large Cap, 10 Mid Cap and 10 Small Cap fund mutual fund open ended schemes. The performance evaluated of sampled mutual fund schemes with the help of Net Asset Value (NAV). The needed daily NAV for sampled mutual funds is extracted from Association of Mutual Funds in India (AMFI) website (www.amfi.com). A risk free rate asset has zero variability of returns. In this study 3-Month Bond Yield Treasury bills have been taken as a risk free rate which is collected. Data of daily closing price for the benchmark index (NSE-Nifty) is collected from the official web site of National Stock Exchange of India. The study covers a period of 2 years i.e. 1 April 2019 to 28 February 2021 i.e. pre and during Covid-19 pandemic. NSE-Nifty is used as market portfolio. In this study 3- Month Government Bond Yield have been used as risk free. The other related information is collected from books, journals, magazines and various websites.

3.2 Period of study

Whole Period of study: 1 April 2019 to 28 February 2021

3.3 Tools/ Techniques used

Descriptive statistics such as Mean, Variance, Standard Deviation, Covariance and Beta are used and performance measurement ratios such as Sharpe ratio, Treynor ratio and Jensen ratio are used. All the analysis are performed using MS excel.

3.4 Variables:

Return on Portfolio,Return on Mrket, Beta, Standard Deviation and Risk Free Rate.

Table: List of the schemes selected for Large cap, Mid Cap and Small Cap Fund.

Sr. No.	Fund	Scheme Name	Type of Scheme
1	Large Cap Fund	Axis Bluechip Fund	Open Ended
2		UTI - Master Share	
3		SBI Blue Chip Fund	
4		Mirae Asset Large Cap Fund	
5		Kotak Bluechip Fund	
6		IDBI India Top 100 Equity Fund	
7		HSBC Large Cap Equity Fund	
8		Edelweiss Large Cap Fund	
9		Canara Robeco Bluechip Equity Fund	
10		BNP Paribas LARGE CAP Fund	
11	Mid Cap Fund	Axis Midcap Fund	Open Ended
12		BNP Paribas Mid Cap Fund	
13		DSP Midcap Fund	
14		Invesco India Mid Cap Fund	
15		Kotak Emerging Equity	
16		Nippon India Growth Fund	
17		PGIM India Midcap Opportunities	
18		SBI Magnum Midcap Fund	
19		Tata Mid Cap Growth Fund	
20		UTI Mid Cap Fund	
21	Small Cap Fund	Axis Small Cap Fund	Open Ended
22		DSP Small Cap Fund	
23		Franklin India Smaller Companies Fund	
24		HDFC small Cap Fund	
25		HSBC Small Cap Equity Fund	
26		IDBI Small Cap Fund	
27		Kotak Small Cap Fund	
28		Nippon India Small Cap Fund	
29		Sundaram Small Cap Fund	
30		Union Small Cap Fund	
31	Index/Market Portfolio	Nifty50	

3.5 Research Questions and Objectives.

Intention of this study is to appraising the performance of mutual funds from various selected mutual fund houses under the category of Large Cap, Mid Cap and Small Cap fund in India.

Based on the above discussion in the background section, the following Research Questions (RQ) followed with the related Objectives (O) are develop for further analysis.

Basically, the present work tried to answer below question:

RQ1: How investors are affected in the period prior to Covid-19 pandemic as well as during the outbreak of Covid-19 pandemic in terms of their risk and returns?

O1: To analyse the risk and return profile of select mutual fund schemes in whole, pre and during Covid-19 pandemic.

Whole Period of study : 1 April 2019 to 28 Feb 2021

Pre period : 1 April 2019 to 24 March 2020

During period : 25 March 2020 to 28 Feb 2021

Tools and techniques

Standard Deviation, Average Return and Beta

RQ2: Which mutual fund scheme performance is better than others among the select based on ranks?

O2: To evaluate the performance of select mutual fund schemes by using Sharpe Ratio, Treynor Ratio and Jensen Ratio in whole, pre and during Covid-19 pandemic.

Whole Period of study : 1 April 2019 to 28 Feb 2021

Pre period : 1 April 2019 to 24 March 2020

During period : 25 March 2020 to 28 Feb 2021

Tools and techniques

Sharpe Ratio, Treynor Ratio and Jensen Ratio

RQ3: Whether any mutual fund scheme among the select outperformed or underperformed the market?

O3: To evaluate Outperformance or Underperformance of select mutual fund schemes during in whole, pre and during Covid-19 pandemic.

Whole Period of study : 1 April 2019 to 28 Feb 2021

Pre period : 1 April 2019 to 24 March 2020

During period : 25 March 2020 to 28 Feb 2021

Tools and techniques

Return on market and Return on portfolio (CAPM)

3.6 Returns

For each mutual fund scheme under study, the daily returns are computed as:

$$\text{Portfolio Return} = (NAV_t - NAV_{t-1}) / NAV_{t-1}$$

Where,

NAV_t = Net Asset value of a mutual fund scheme for a day t,

NAV_{t-1} = the net asset value for day (t-1)

For the benchmark index, the return is calculated as:

$$\text{Market Return} = (Index_t - Index_{t-1})/Index_{t-1}$$

Capital Asset Pricing Model (CAPM)

$$E(Rp) = R\{f\}+beta\{i\}(E(R\{m\}) - R\{f\})$$

E(Rp)= capital asset expected return (Return on Portfolio)

R_{f} = risk-free rate of interest

Beta{i}= sensitivity

E(R{m})= expected return of the market

RISK:

Standard deviation is a measure of risk. The standard deviation of index mutual fund schemes has been calculated as under:

$$\sigma_p = \sqrt{\frac{1}{n-1}\sum_{t-1}^{n}(R_p - \bar{R}_p)^2}$$

Where,

σ_p = risk of portfolio

$$\sigma_m = \sqrt{\frac{1}{n-1}\sum_{t-1}^{n}(R_m - \bar{R}_m)^2}$$

Where,

σ_m= risk of benchmark

BETA (β)

Beta is the systematic risk. Beta is undiversificable in nature. It has been calculated by using this formula:

$$\beta_p = \frac{Cov_{Rp.Rm}}{\sigma_m^2}$$

Where,

β_p = Systematic risk of the portfolio,

Cov (Rp, Rm) = Covariance between the return on portfolio and market,

σ_m^2 = Variance of market return

3.7 Performance ratios

THE SHARPE's MEASURE

In this model, performance of the is evaluated on the basis of Sharpe ratio, which is ratio of returns generated by the fund over and above risk free return and the total risk associated with it. According to Sharpe, it is the total risk of the fund that the investors are concerned about. So this model evaluates funds on the basis of reward per unit of total risk.

$$\textbf{Sharpe Index} = \frac{portfolio\ average\ return - risk\ free\ rate\ of\ return}{standard\ deviation\ of\ the\ portfolio\ return}$$

Symbolically, it can be written as:

$$S_p = \frac{(R_p - R_f)}{\sigma_p}$$

Where,

S_p = Sharpe Index

R_p = Portfolio average return

R_f = Risk free rate of return

σ_p = Standard deviation of the portfolio return

While a high positive Sharpe ratio shows a superior risk adjusted performance of a fund, a low and negative Sharpe ratio is an indication of unfavorable performance.

TREYNOR's MEASURE:

It was developed by Jack Treynor. Treynor's index is a ratio of return generated by the fund over and above free risk return (i.e. Government securities, Treasury bills), during thee given period of time and systematic risk associated with beta.

$$Treynor's\ index = \frac{actual\ return - risk\ free\ return}{beta}$$

Symbolically, it can be written as:

$$T_p = \frac{(R_p - R_f)}{\beta_p}$$

Where,

T_p = Treynor's index

R_p = Portfolio average return

R_f = Risk free rate of return

β_p = Beta of the portfolio return

All risk-averse investors would like to maximize this value. While high and positive Treynor's index shows a superior risk adjusted performance of fund, a low and negative Treyonr's index is an indication of unfavorable performances.

JENSEN's MODEL:

Jansen's model proposes another risk adjusted performance measure. Micheal Jenson developed this measure and it is referred as the differential return method. This measure involves evaluation of returns that the fund has generated versus the return actually out of the fund given at that level of systematic risk. The surplus between the two returns is called Alpha,

which measures the performance of a fund compared with the actual return over the period. Required rate of the return on fund at a given level of beta can be calculated as:

$$J_p = \frac{\alpha_p}{\beta_p}$$

Where,

$$\alpha_p = R_p - \bar{R}_p$$

Where,

$$\bar{R}_p = R_f + \beta_p(R_m - R_f)$$

Where,

J_p = Jensen's ratio

α_p = the intercept

β_p = a measure of systematic risk

R_f = risk free rate of return

R_m = average market return

3.8 Summary

In this chapter in introduction section the information about the data source, period of the study and the sample considered for the study is mentioned.
The tools and techniques used for the study are discussed in detail in this chapter. The research question and objectives framed for the study and how each objective will be achieved is clearly stated. The formulas used for the calculation of various parameters and performance evaluation ratios are also mentioned.

CHAPTER 4: DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

Descriptive statistics such as Mean, Variance, Standard Deviation, Covariance and Beta are used to reflect the risk and return profile of the each of the scheme during the all the three periods i.e. whole, pre and during covid 19 pandemic. Performance measurement ratios such as Sharpe ratio, Treynor ratio and Jensen ratio are used to evaluate the performance of the all the three categories of mutual fund scheme i.e. Large cap, Mid cap and Small cap during the study period. The study considers the return on portfolio as per capital asset pricing model rather than the simple average return which is used to compare with the market return to arrive at outperformance or underperformance of the mutual fund scheme. All the analysis are performed using MS excel.

4.2 Risk and Return

Mean is a basic statical measure is defined as an average value attained. With less time and resources available for calculation of complex or complicated measures, mean is considered desirable to get a quick, first hand estimate of future returns based on the data available of the returns from the asset in the past. Mean shows the average returns. Whereas, Standard deviation and beta is a indicator of risk level i.e. the amount of variation and volatility in returns.

4.2.1 LARGE CAP: Whole Period

Table 4.1: Results for Risk and Return Analysis of Large Cap Fund Scheme for Whole Period

Scheme Name	**Standard Deviation**	Average Return	Beta	Rp
Axis Bluechip Fund	1.33258	0.07226	0.81116	0.05203
UTI - Master Share	1.46683	0.06389	0.90669	0.05761
SBI Blue Chip Fund	1.54078	0.07012	0.94514	0.05986
Mirae Asset Large Cap Fund	1.54212	0.06289	0.95210	0.06026
Kotak Bluechip Fund	1.50719	0.06984	0.93445	0.05923
IDBI India Top 100 Equity Fund	1.46234	0.06872	0.90426	0.05747
HSBC Large Cap Equity Fund	1.52796	0.06444	0.94497	0.05985
Edelweiss Large Cap Fund	1.44549	0.06370	0.89308	0.05682
Canara Robeco Bluechip Equity Fund	1.41499	0.08126	0.87543	0.05579
BNP Paribas LARGE CAP Fund	1.39315	0.07628	0.86022	0.05490

Source: Authors Compilation

In the above Table 4.1 Canara Robeco Bluechip Equity Fund shows the highest mean value which is 0.08126, it means the highest average return is of Canara Robeco Bluechip Equity Fund, which makes it the best performer. The lowest mean is of Mirae Asset Large Cap Fund which is 0.06289, which makes it the lowest performer in the selected sample schemes. The highest value of standard deviation is for Mirae Asset Large Cap Fund which is 1.54212 and the lowest value of standard deviation is of Axis Bluechip Fund which is 1.33258. This means the volatile fund amongst the 10 sample fund is Mirae Asset Large Cap Fund i.e. it has the highest amount of risk associated with it. On the other hand the Axis Bluechip Fund has least amount of risk associated. It can be seen that SBI Blue Chip Fund is having high beta value i.e. 0.94514 which indicate that there is high volatility in returns of SBI Blue Chip Fund. Axis Bluechip Fund returns witnessed very low volatility as the value of beta is 0.81116. But all funds beta is noticed to be closed to 1 during the study period which indicates that returns from large cap fund does move in tandem with market return.

4.2.2 LARGE CAP: Pre Covid-19 Period

Table 4.2: Results for Risk and Return Analysis of Large Cap Fund Scheme for Pre Period

Scheme Name	**Standard Deviation**	Average Return	Beta	Rp
Axis Bluechip Fund - Regular Plan – Growth	1.14173	-0.02589	0.79814	-0.08120
UTI - Master Share-Growth Option	1.26168	-0.08640	0.90243	-0.09241
SBI Blue Chip Fund-Regular Plan Growth	1.30308	-0.09875	0.91837	-0.09413
Mirae Asset Large Cap Fund - Growth Plan	1.33370	-0.09928	0.94852	-0.09737
Kotak Bluechip Fund – Growth	1.31745	-0.08847	0.94381	-0.09686
IDBI India Top 100 Equity Fund Growth	1.24582	-0.07068	0.89082	-0.09116
HSBC Large Cap Equity Fund - Growth	1.30509	-0.08673	0.92803	-0.09517
Edelweiss Large Cap Fund - Regular Plan - Growth option	1.27816	-0.08401	0.91276	-0.09352
Canara Robeco Bluechip Equity Fund - Regular Plan – Growth	1.24173	-0.04566	0.88676	-0.09073
BNP Paribas LARGE CAP Fund - Direct Plan - Growth Option	1.19801	-0.04779	0.85130	-0.08691

Source: Authors Compilation

In the above Table 4.2 Mirae Asset Large Cap Fund shows the highest mean value which is -0.09928, it means the highest average return is of Mirae Asset Large Cap Fund, which makes it the best performer. The lowest mean is of Axis Bluechip Fund which is -0.02589, which makes it the lowest performer in the selected sample schemes.

Standard deviation shows the deviation of the fund returns around mean. The highest value of standard deviation is for Mirae Asset Large Cap Fund which is 1.33370and the lowest value of standard deviation is of Axis Bluechip Fund which is 1.14173. This means the volatile fund amongst the 10 sample fund is Mirae Asset Large Cap Fund i.e. it has the highest amount of risk associated with it. On the other hand the Axis Bluechip Fund has least amount of risk associated.

From the above table of Beta value it can be seen that Mirae Asset Large Cap Fund is having high beta value i.e. 0.94852which indicate that there is high volatility in returns of Mirae Asset Large Cap Fund. Axis Bluechip Fund returns witnessed very low volatility as the value of beta is 0.79814. But all funds beta is noticed to be closed to 1 during the study period which indicates that returns from large cap fund does move in tandem with market return. Except Axis Bluechip Fund that is 0.79813

4.2.3 LARGE CAP: During Covid-19 Period

Table 4.3: Results for Risk and Return Analysis of Large Cap Fund Schemes for During Period

Scheme Name	**Standard Deviation**	Average Return	Beta	Rp
Axis Bluechip Fund - Regular Plan – Growth	1.49732	0.17167	0.82298	0.19106
UTI - Master Share-Growth Option	1.63754	0.21610	0.90929	0.21061
SBI Blue Chip Fund-Regular Plan Growth	1.73507	0.24116	0.96009	0.22212
Mirae Asset Large Cap Fund - Growth Plan	1.71510	0.22714	0.95382	0.22070
Kotak Bluechip Fund – Growth	1.66521	0.23017	0.92843	0.21495
IDBI India Top 100 Equity Fund Growth	1.64370	0.20992	0.91356	0.21158
HSBC Large Cap Equity Fund - Growth	1.71389	0.21755	0.95586	0.22116
Edelweiss Large Cap Fund - Regular Plan - Growth option	1.58598	0.21330	0.88119	0.20425
Canara Robeco Bluechip Equity Fund - Regular Plan – Growth	1.56334	0.20980	0.87053	0.20183
BNP Paribas LARGE CAP Fund - Direct Plan - Growth Option	1.55878	0.20194	0.86764	0.20118

Source: Authors Compilation

In the above table 4.3 SBI Blue Chip Fund shows the highest mean value which is 0.24116, it means the highest average return is of SBI Blue Chip Fund, which makes it the best performer. The lowest mean is of Axis Bluechip Fund which is 0.17167 which makes it the lowest performer

in the selected sample schemes. The highest value of standard deviation is for SBI Blue Chip Fund which is 1.73507and the lowest value of standard deviation is of Axis Bluechip Fund which is1.49732. This means the volatile fund amongst the 10 sample fund is SBI Blue Chip Fund i.e. it has the highest amount of risk associated with it. On the other hand the Axis Bluechip Fund has least amount of risk associated. It can be seen that SBI Blue Chip Fund is having high beta value i.e. 0.96009which indicate that there is high volatility in returns of SBI Blue Chip Fund. Axis Bluechip Fund returns witnessed very low volatility as the value of beta is0.82298. But all funds beta is noticed to be closed to 1 during the study period which indicates that returns from large cap fund does move in tandem with market return.

4.2.4 Mid cap: Whole Period

Table 4.4: Results for Risk and Return Analysis of Mid Cap Fund Schemes for Whole Period

Scheme Name	**Standard Deviation**	Average Return	Beta	Rp
Axis Midcap Fund	1.17475	0.08825	0.64595	0.04238
BNP Paribas Mid Cap Fund	1.24830	0.08712	0.67270	0.04394
DSP Midcap Fund	1.28493	0.07525	0.71951	0.04668
Invesco India Mid Cap Fund	1.35457	0.07997	0.75012	0.04846
Kotak Emerging Equity	1.31815	0.08706	0.72148	0.04679
Nippon India Growth Fund	1.35478	0.07814	0.75919	0.04899
PGIM India Midcap Opportunities	1.45129	0.12019	0.80655	0.05176
SBI Magnum Midcap Fund	1.34762	0.08261	0.71301	0.04630
Tata Mid Cap Growth Fund	1.38735	0.07382	0.76806	0.04951
UTI Mid Cap Fund	1.38075	0.08468	0.76748	0.04948

Source: Authors Compilation

Mean shows the average returns. In the above table 4.4 PGIM India Midcap Opportunities shows the highest mean value which is 0.12019, it means the highest average return is of PGIM India Midcap Opportunities, which makes it the best performer. The lowest mean is of Tata Mid Cap Growth Fund which0.07382, which makes it the lowest performer in the selected sample schemes.

Standard deviation shows the deviation of the fund returns around mean. The highest value of standard deviation is for PGIM India Midcap Opportunities which is 1.45129 and the lowest value of standard deviation is of Axis Midcap Fund which is 1.17475 .This means the volatile fund amongst the 10 sample fund is PGIM India Midcap Opportunities i.e. it has the highest amount of risk associated with it. On the other hand the Axis Midcap Fund has least amount of risk associated.

From the above table of Beta value it can be seen that PGIM India Midcap Opportunities is having high beta value i.e. 0.80655 which indicate that there is high volatility in returns of PGIM India Midcap Opportunities. Axis Midcap Fund returns witnessed very low volatility as the value of beta is 0.64595. But all funds beta is noticed to be closed to 1 during the study period which indicates that returns from large cap fund does move in tandem with market return.

4.2.5 Mid cap: Pre Covid-19 Period

Table 4.5: Results for Risk and Return Analysis of Mid Cap Fund Schemes for Pre Period

Scheme Name	**Standard Deviation**	Average Return	Beta	Rp
Axis Midcap Fund	1.04678	-0.02762	0.68401	-0.06892
BNP Paribas Mid Cap Fund	1.15274	-0.06079	0.75464	-0.07652
DSP Midcap Fund	1.11243	-0.05498	0.74271	-0.07524
Invesco India Mid Cap Fund	1.18996	-0.06015	0.79253	-0.08059
Kotak Emerging Equity	1.17915	-0.07599	0.78439	-0.07972
Nippon India Growth Fund	1.24253	-0.08205	0.83850	-0.08554
PGIM India Midcap Opportunities	1.40629	-0.07296	0.76661	-0.11074
SBI Magnum Midcap Fund	1.17979	-0.11372	0.75381	-0.07643
Tata Mid Cap Growth Fund	1.20817	-0.08109	0.80095	-0.08150
UTI Mid Cap Fund	1.25523	-0.08793	0.83951	-0.08565

Source: Authors Compilation

Mean shows the average returns. In the above table 4.5 SBI Magnum Midcap Fund shows the highest mean value which is -0.11372, it means the highest average return is of SBI Magnum Midcap Fund, which makes it the best performer. The lowest mean is of Axis Midcap Fund which is -0.02762, which makes it the lowest performer in the selected sample schemes.

Standard deviation shows the deviation of the fund returns around mean. The highest value of standard deviation is for PGIM India Midcap Opportunities which is 1.40629 and the lowest value of standard deviation is of Axis Midcap Fund which is 1.04678. This means the volatile fund amongst the 10 sample fund is PGIM India Midcap Opportunities i.e. it has the highest amount of risk associated with it. On the other hand the Axis Midcap Fund has least amount of risk associated.

From the above table of Beta value it can be seen that UTI Mid Cap Fund is having high beta value i.e. 0.83951which indicate that there is high volatility in returns of UTI Mid Cap Fund.

Axis Midcap Fund returns witnessed very low volatility as the value of beta is 0.68401. But all funds beta is noticed to be closed to 1 during the study period which indicates that returns from large cap fund does move in tandem with market return.

4.2.6 Mid cap: Post Covid-19 Period

Table 4.6: Results for Risk and Return Analysis of Large Cap Fund Schemes for During Period

Scheme Name	**Standard Deviation**	Average Return	Beta	Rp
Axis Midcap Fund	1.28312	0.20560	0.62193	0.14552
BNP Paribas Mid Cap Fund	1.32383	0.23692	0.61910	0.14488
DSP Midcap Fund	1.42909	0.20714	0.70428	0.16418
Invesco India Mid Cap Fund	1.49223	0.22188	0.72272	0.16835
Kotak Emerging Equity	1.42903	0.25220	0.67867	0.15837
Nippon India Growth Fund	1.44432	0.24038	0.70742	0.16489
PGIM India Midcap Opportunities	1.55104	0.31771	0.75647	0.17600
SBI Magnum Midcap Fund	1.47466	0.28147	0.67989	0.15865
Tata Mid Cap Growth Fund	1.53458	0.23072	0.74517	0.17344
UTI Mid Cap Fund	1.47946	0.25950	0.71893	0.16749

Source: Authors Compilation

Mean shows the average returns. In the above table 4.6 PGIM India Midcap Opportunities shows the highest mean value which is 0.31771, it means the highest average return is of PGIM India Midcap Opportunities, which makes it the best performer. The lowest mean is of Axis Midcap Fund which is 0.20560, which makes it the lowest performer in the selected sample schemes.

Standard deviation shows the deviation of the fund returns around mean. The highest value of standard deviation is for PGIM India Midcap Opportunities which is 1.55104 and the lowest value of standard deviation is of Axis Midcap Fund which is 1.28312. This means the volatile fund amongst the 10 sample fund is PGIM India Midcap Opportunities i.e. it has the highest amount of risk associated with it. On the other hand the Axis Midcap Fund has least amount of risk associated.

From the above table of Beta value it can be seen that PGIM India Midcap Opportunities is having high beta value i.e. 0.75647 which indicate that there is high volatility in returns of PGIM India Midcap Opportunities .BNP Paribas Mid Cap Fund returns witnessed very low volatility as the value of beta is 0.61910. But all funds beta is noticed to be closed to 1 during the study period which indicates that returns from large cap fund does move in tandem with market return.

4.2.7 Small Cap Fund : Whole Period

Table 4.7: Results for Risk and Return Analysis of Small Cap Fund Schemes for Whole Period

Scheme Name	**Standard Deviation**	Average Return	Beta	Rp
Axis Small Cap Fund	1.25320	0.09524	0.62093	0.04092
DSP Small Cap Fund	1.29094	0.07668	0.65344	0.04282
Franklin India Smaller Companies Fund	1.37024	0.04883	0.73327	0.04748
HDFC small Cap Fund	1.33935	0.04236	0.68690	0.04477
HSBC Small Cap Equity Fund	1.33935	0.04236	0.68690	0.04477
IDBI Small Cap Fund	1.30780	0.05241	0.67362	0.04400
Kotak Small Cap Fund	1.29356	0.10756	0.67253	0.04393
Nippon India Small Cap Fund	1.41006	0.08160	0.74708	0.04829
Sundaram Small Cap Fund	1.44402	0.05163	0.70677	0.04593
Union Small Cap Fund	1.31926	0.09134	0.66902	0.04373

Source: Authors Compilation

Mean shows the average returns. In the above table 4.7 Kotak Small Cap Fund shows the highest mean value which is 0.10756, it means the highest average return is of Kotak Small Cap Fund, which makes it the best performer. The lowest mean is of HDFC small Cap Fund & HSBC Small Cap Equity Fund which is 0.04236 which makes them the lowest performer in the selected sample schemes.

Standard deviation shows the deviation of the fund returns around mean. The highest value of standard deviation is for Sundaram Small Cap Fund which is 1.44402 and the lowest value of standard deviation is of Axis Small Cap Fund which is 1.25320. This means the volatile fund amongst the 10 sample fund is i.e. Sundaram Small Cap Fund. it has the highest amount of risk associated with it. On the other hand the Axis Small Cap Fund has least amount of risk associated. From the above table of Beta value it can be seen that Nippon India Small Cap Fund is having high beta value i.e. 0.74708 which indicate that there is high volatility in returns of Nippon India Small Cap Fund. Axis Small Cap Fund returns witnessed very low volatility as the value of beta is0.62093. But all funds beta is noticed to be closed to 1 during the study period which indicates that returns from large cap fund does move in tandem with market return.

4.2.8 Small Cap Fund : Pre Covid-19 Period

Table 4.8: Results for Risk and Return Analysis of Small Cap Fund Schemes for Pre Period

Scheme Name	**Standard Deviation**	Average Return	Beta	Rp
Axis Small Cap Fund	1.03419	-0.01950	0.60277	-0.06018
DSP Small Cap Fund	1.16626	-0.11787	0.71810	-0.07259
Franklin India Smaller Companies Fund	1.14476	-0.16769	0.73961	-0.07490
HDFC small Cap Fund	1.17197	-0.19665	0.73658	-0.07458
HSBC Small Cap Equity Fund	1.26599	-0.17257	0.79967	-0.08136
IDBI Small Cap Fund	1.19335	-0.14137	0.73150	-0.07403
Kotak Small Cap Fund	1.14728	-0.10047	0.73230	-0.07412
Nippon India Small Cap Fund	1.25841	-0.13722	0.81176	-0.08266
Sundaram Small Cap Fund	1.35117	-0.16224	0.81513	-0.08302
Union Small Cap Fund	1.15248	-0.08911	0.72286	-0.07310

Source: Authors Compilation

Mean shows the average returns. In the above table 4.8 HDFC small Cap Fund shows the highest mean value which is-0.19665, it means the highest average return is of HDFC small Cap Fund, which makes it the best performer. The lowest mean is of Axis Small Cap Fund which is -0.01950 which makes it the lowest performer in the selected sample schemes.

Standard deviation shows the deviation of the fund returns around mean. The highest value of standard deviation is for Sundaram Small Cap fund which is 1.35117 and the lowest value of standard deviation is of Axis Small Cap Fund which is 1.03419. This means the volatile fund amongst the 10 sample fund is Sundaram Small Cap fund i.e. it has the highest amount of risk associated with it. On the other hand the Axis Small Cap Fund has least amount of risk associated. From the above table of Beta value it can be seen that Sundaram Small Cap Fund is having high beta value i.e. 0.81513 which indicate that there is high volatility in returns of Sundaram Small Cap Fund. Axis Small Cap Fund returns witnessed very low volatility as the value of beta is 0.60277. But all funds beta is noticed to be closed to 1 during the study period which indicates that returns from large cap fund does move in tandem with market return.

4.2.9 Small Cap Fund : During Covid-19 Period

Table 4.9: Results for Risk and Return Analysis of Small Cap Fund Schemes for During Period

Scheme Name	**Standard Deviation**	Average Return	Beta	Rp
Axis Small Cap Fund	1.43447	0.21146	0.63070	0.14751
DSP Small Cap Fund	1.38076	0.27373	0.60498	0.14168
Franklin India Smaller Companies Fund	1.53754	0.26812	0.71924	0.16756
HDFC small Cap Fund	1.45270	0.28443	0.64335	0.15037
HSBC Small Cap Equity Fund	1.55111	0.28320	0.69815	0.16279
IDBI Small Cap Fund	1.38952	0.24867	0.62971	0.14728
Kotak Small Cap Fund	1.39768	0.31825	0.62593	0.14643
Nippon India Small Cap Fund	1.51944	0.30322	0.69767	0.16268
Sundaram Small Cap Fund	1.50445	0.26823	0.63068	0.14750
Union Small Cap Fund	1.44872	0.27410	0.62891	0.14710

Source: Authors Compilation

Mean shows the average returns. In the above table 4.9 Kotak Small Cap Fund shows the highest mean value which is 0.31825, it means the highest average return is of Kotak Small Cap Fund, which makes it the best performer. The lowest mean is of Axis Small Cap Fund which is 0.21146 which makes it the lowest performer in the selected sample schemes.The highest value of standard deviation is for HSBC Small Cap Equity Fund which is 1.55111 and the 1.38076 lowest value of standard deviation is of DSP Small Cap Fund which is. This means the volatile fund amongst the 10 sample fund is HSBC Small Cap Equity Fund i.e. it has the highest amount of risk associated with it. On the other hand the DSP Small Cap Fund has least amount of risk associated. It can be seen that Franklin India Smaller Companies Fund is having high beta value i.e. 0.71924 which indicate that there is high volatility in returns of Franklin India Smaller Companies Fund. DSP Small Cap Fund returns witnessed very low volatility as the value of beta is 0.60498. But all funds beta is noticed to be closed to 1 during the study period which indicates that returns from large cap fund does move in tandem with market return.

4.3 Performance Evaluation

Portfolio performance can be evaluated by using the performance evaluation ratios in order to get a better understanding of the risk return trade-off. Here three ratios are used which helps in ranking of the portfolios.

4.3.1 Large Cap: Whole, Pre- and During Covid-19 Period (Sharpe Ratio)

Table 4.10: Results for Sharpe Ratio for Large Cap Fund Schemes

Scheme Name	W	P	D
	SHARPE RATIO	**SHARPE RATIO**	**SHARPE RATIO**
Axis Bluechip Fund - Regular Plan - Growth	0.03556	-0.07518	0.12450
UTI - Master Share-Growth Option	0.03611	-0.07693	0.12578
SBI BLUE CHIP FUND-REGULAR PLAN GROWTH	0.03584	-0.07580	0.12534
Mirae Asset Large Cap Fund - Growth Plan	0.03607	-0.07649	0.12597
Kotak Bluechip Fund - Growth	0.03622	-0.07705	0.12629
IDBI India Top 100 Equity Fund Growth	0.03613	-0.07690	0.12590
HSBC Large Cap Equity Fund - Growth	0.03613	-0.07648	0.12633
Edelweiss Large Cap Fund - Regular Plan - Growth option	0.03609	-0.07680	0.22652
Canara Robeco Bluechip Equity Fund - Growth	0.03614	-0.07680	0.12613
BNP Paribas LARGE CAP Fund - Growth Option	0.03607	-0.07642	0.12608

Source: Authors Compilation
Note: W = Whole Period, P = Pre Covid-19 Period and D = During Covid-19 Period.

Above table 4.10 shows the Sharpe ratio for three period that is whole period, pre pandemic period and during pandemic period and it is noticed to be highest in during pandemic period in case of Edelweiss Large Cap Fund - Regular Plan - Growth option that is 0.22652 as compared to other schemes. And all the selected large cap funds schemes showed poor performance in pre pandemic period. High value of Sharpe indicates that the fund is performing well in respect to the risk associated with it. On the other hand the lowest Sharpe ratio shows that the fund is not performing well in response to the risk involved therein.

4.3.2 Large Cap: Whole, Pre- and During Covid-19 Period (Treynor Ratio)

Table 4.11: Results for Treynor Ratio for Large Cap Fund Schemes

Scheme Name	W	P	D
	TREYNOR RATIO	TREYNOR RATIO	TREYNOR RATIO
Axis Bluechip Fund - Regular Plan - Growth	0.05842	-0.10755	0.22652
UTI - Master Share-Growth Option	0.05842	-0.10755	0.22652
Sbi Blue Chip Fund-Regular Plan Growth	0.05842	-0.10755	0.22652
Mirae Asset Large Cap Fund - Growth Plan	0.05842	-0.10755	0.22652
Kotak Bluechip Fund - Growth	0.05842	-0.10755	0.22652
IDBI India Top 100 Equity Fund Growth	0.05842	-0.10755	0.22652
HSBC Large Cap Equity Fund - Growth	0.05842	-0.10755	0.22652
Edelweiss Large Cap Fund - Growth option	0.05842	-0.10755	0.22652
Canara Robeco Bluechip Equity Fund - Growth	0.05842	-0.10755	0.22652
BNP Paribas LARGE CAP Fund - Growth	0.05842	-0.10755	0.22652

Source: Authors Compilation
Note: W = Whole Period, P = Pre Covid-19 Period and D = During Covid-19 Period.

Above table 4.11 shows the Treynor ratio for three period that is whole period, pre pandemic period and during pandemic period and it is noticed to be highest in whole period in case of all the selected large cap funds. And all the selected large cap funds showed poor performance in pre pandemic period. High value of Treynor indicates that the fund's performance in accordance to systematic risk is high. On the other hand from the lowest values it can be interpreted that the fund's performance is low when calculated in respect of systematic risk.

4.3.3 Large Cap: Whole, Pre- and During Covid-19 Period (Jensen Ranking)

Table 4.12: Results for Jenson Ratio for Large Cap Fund Schemes

Scheme Name	W	P	D
	JENSEN RANKING	JENSEN RANKING	JENSEN RANKING
Axis Bluechip Fund - Regular Plan - Growth	0.02494	0.06929	-0.02356
UTI - Master Share-Growth Option	0.00692	0.00667	0.00604
Sbi Blue Chip Fund-Regular Plan Growth	0.01086	-0.00504	0.01983
Mirae Asset Large Cap Fund - Growth Plan	0.00276	-0.00202	0.00676
Kotak Bluechip Fund - Growth	0.01135	0.00890	0.01639
IDBI India Top 100 Equity Fund Growth	0.01245	0.02300	-0.00182
HSBC Large Cap Equity Fund - Growth	0.00486	0.00909	-0.00378
Edelweiss Large Cap Fund - Regular Plan - Growth option	0.00771	0.01042	0.01028
Canara Robeco Bluechip Equity Fund - Regular Plan - Growth	0.02910	0.05082	0.00915
BNP Paribas LARGE CAP Fund - Direct Plan - Growth Option	0.02486	0.04596	0.00088

Source: Authors Compilation
Note: W = Whole Period, P = Pre Covid-19 Period and D = During Covid-19 Period.

Above table 4.12 shows results of Jensen measure for three period that is whole period, pre pandemic period and during pandemic period and it revealed that 8 out of 10 selected large cap funds showed positive alpha which indicates superior performance of the schemes over the benchmark in during pandemic period. In case of pre pandemic period Jensen ratio is noticed to be negative only in case of SBI Blue Chip Fund-Regular Plan Growth and Kotak Bluechip Fund - Growth i.e. -0.00504 and -0.00202 respectively. All schemes have given positive alpha in whole period. It means that schemes with positive alpha has been outperforming against the benchmark and schemes with negative alpha is underperforming the benchmark. From Jensen measure it can be seen that all schemes shows positive value in whole period which indicate superior performance of the schemes and indicate better result on part of their fund manager to forecast security prices on time for taking better investment decision.

4.3.4 Mid Cap: Whole, Pre- and During Covid-19 Period (Sharpe Ratio)

Table 4.13: Results for Sharpe Ratio for Mid Cap Fund Schemes

Scheme Name	W SHARPE RATIO	P SHARPE RATIO	D SHARPE RATIO
Axis Midcap Fund	0.03212	-0.07028	0.10979
BNP Paribas Mid Cap Fund	0.03148	-0.07041	0.10593
DSP Midcap Fund	0.03271	-0.07180	0.11163
Invesco India Mid Cap Fund	0.03235	-0.07163	0.10971
Kotak Emerging Equity	0.03198	-0.07154	0.10758
Nippon India Growth Fund	0.03274	-0.07258	0.11095
PGIM India Midcap Opportunities	0.03247	-0.08205	0.11048
SBI Magnum Midcap Fund	0.03091	-0.06872	0.10444
Tata Mid Cap Growth Fund	0.03234	-0.07130	0.10999
UTI Mid Cap Fund	0.03247	-0.07193	0.11008

Source: Authors Compilation
Note: W = Whole Period, P = Pre Covid-19 Period and D = During Covid-19 Period.

Above table 4.13 shows the Sharpe ratio for three period that is whole period, pre pandemic period and during pandemic period. Sharpe ratio is noticed to be highest during pandemic period in case of all the schemes. And all the selected mid cap funds scheme showed poor performance in pre pandemic period. High value of Sharpe indicates that the fund is performing well in respect to the risk associated with it. On the other hand the lowest Sharpe ratio shows that the fund is not performing well in response to the risk involved therein.

4.3.5 Mid Cap: Whole, Pre- and During Covid-19 Period (Treynor Ratio)

Table 4.14: Results for Treynor Ratio for Mid Cap Fund Schemes

Scheme Name	W TREYNOR RATIO	P TREYNOR RATIO	D TREYNOR RATIO
Axis Midcap Fund	0.05842	-0.10755	0.22652
BNP Paribas Mid Cap Fund	0.05842	-0.10755	0.22652
DSP Midcap Fund	0.05842	-0.10755	0.22652
Invesco India Mid Cap Fund	0.05842	-0.10755	0.22652
Kotak Emerging Equity	0.05842	-0.10755	0.22652
Nippon India Growth Fund	0.05842	-0.10755	0.22652
PGIM India Midcap Opportunities	0.05842	-0.15051	0.22652
SBI Magnum Midcap Fund	0.05842	-0.10755	0.22652
Tata Mid Cap Growth Fund	0.05842	-0.10755	0.22652
UTI Mid Cap Fund	0.05842	-0.10755	0.22652

Source: Authors Compilation
Note: W = Whole Period, P = Pre Covid-19 Period and D = During Covid-19 Period.

Above table 4.14 shows the Treynor ratio for three period that is whole period, pre pandemic period and during pandemic period and it is noticed to be highest in during pandemic period in case of all the selected mid cap funds. And all the selected mid cap funds showed poor performance pre pandemic period. High value of Treynor indicates that the fund's performance in accordance to systematic risk is high. On the other hand from the lowest values it can be interpreted that the fund's performance is low when calculated in respect of systematic risk.

4.3.6 Mid Cap: Whole, Pre- and During Covid-19 Period (Jensen Ranking)

Table 4.15: Results for Jenson Ratio for Mid Cap Fund Schemes

	W	P	D
Scheme Name	JENSEN RANKING	JENSEN RANKING	JENSEN RANKING
Axis Midcap Fund	0.07101	0.06039	0.09660
BNP Paribas Mid Cap Fund	0.06418	0.02085	0.14867
DSP Midcap Fund	0.03971	0.02728	0.06101
Invesco India Mid Cap Fund	0.04200	0.02580	0.07407
Kotak Emerging Equity	0.05581	0.00475	0.13825
Nippon India Growth Fund	0.03839	0.00416	0.10672
PGIM India Midcap Opportunities	0.08484	0.04928	0.18734
SBI Magnum Midcap Fund	0.05093	-0.04947	0.18064
Tata Mid Cap Growth Fund	0.03165	0.00051	0.07687
UTI Mid Cap Fund	0.04586	-0.00272	0.12798

Source: Authors Compilation
Note: W = Whole Period, P = Pre Covid-19 Period and D = During Covid-19 Period.

Above table 4.15 shows results of Jensen measure for three period that is whole period, pre pandemic period and during pandemic period. It revealed that all the 10 selected mid cap funds showed positive alpha which indicates superior performance of the schemes over the benchmark during the pandemic period. Likewise, except SBI Magnum Midcap Fund and UTI Mid Cap Fund all other funds have given positive alpha in whole period. It means that schemes with positive alpha has been outperforming against the benchmark and schemes with negative alpha is underperforming the benchmark. From Jensen measure it can be seen that all schemes shows positive value in during pandemic period which indicate superior performance of the schemes and indicate better result on part of their fund manager to forecast security prices on time for taking better investment decision.

4.3.7 Small Cap: Whole, Pre- and During Covid-19 Period (Sharpe Ratio)

Table 4.16: Results for Sharpe Ratio for Small Cap Fund Schemes

Scheme Name	W	P	D
	SHARPE RATIO	**SHARPE RATIO**	**SHARPE RATIO**
Axis Small Cap Fund	0.02895	-0.06268	0.09959
DSP Small Cap Fund	0.02957	-0.06622	0.09925
Franklin India Smaller Companies Fund	0.03126	-0.06949	0.10596
HDFC small Cap Fund	0.02996	-0.06759	0.10032
HSBC Small Cap Equity Fund	0.02996	-0.06793	0.10196
IDBI Small Cap Fund	0.03009	-0.06593	0.10266
Kotak Small Cap Fund	0.03037	-0.06865	0.10144
Nippon India Small Cap Fund	0.03095	-0.06938	0.10401
Sundaram Small Cap Fund	0.02859	-0.06488	0.09496
Union Small Cap Fund	0.02963	-0.06746	0.09834

Source: Authors Compilation
Note: W = Whole Period, P = Pre Covid-19 Period and D = During Covid-19 Period.

Above table 4.16 shows the Sharpe ratio for three period that is whole period, pre pandemic period and during pandemic period. Sharpe ratio is noticed to be highest during pandemic period in case of Franklin India Smaller Companies Fund, HDFC small Cap Fund, HSBC Small Cap Equity Fund, IDBI Small Cap Fund, Kotak Small Cap Fund and Nippon India Small Cap Fund that is 0.10596, 0.10032, 0.10196, 0.10266 0.10144 and 0.10401 respectively. And all the selected small cap funds showed poor performance in pre pandemic period. High value of Sharpe indicates that the fund is performing well in respect to the risk associated with it. On the other hand the lowest Sharpe ratio shows that the fund is not performing well in response to the risk involved therein.

4.3.8 Small Cap: Whole, Pre- and During Covid-19 Period (Treynor Ratio)

Table 4.17: Results for Treynor Ratio for Small Cap Fund Schemes

Scheme Name	W	P	D
	TREYNOR RATIO	TREYNOR RATIO	TREYNOR RATIO
Axis Small Cap Fund	0.05842	-0.10755	0.22652
DSP Small Cap Fund	0.05842	-0.10755	0.22652
Franklin India Smaller Companies Fund	0.05842	-0.10755	0.22652
HDFC small Cap Fund	0.05842	-0.10755	0.22652
HSBC Small Cap Equity Fund	0.05842	-0.10755	0.22652
IDBI Small Cap Fund	0.05842	-0.10755	0.22652
Kotak Small Cap Fund	0.05842	-0.10755	0.22652
Nippon India Small Cap Fund	0.05842	-0.10755	0.22652
Sundaram Small Cap Fund	0.05842	-0.10755	0.22652
Union Small Cap Fund	0.05842	-0.10755	0.22652

Source: Authors Compilation
Note: W = Whole Period, P = Pre Covid-19 Period and D = During Covid-19 Period.

Above table 4.17 shows the Treynor ratio for three period that is whole period, pre pandemic period and during pandemic period and it is noticed to be highest in during pandemic period in case of all the selected small cap funds. And all the selected small cap funds showed poor performance pre pandemic period. High value of Treynor indicates that the fund's performance in accordance to systematic risk is high. On the other hand from the lowest values it can be interpreted that the fund's performance is low when calculated in respect of systematic risk.

4.3.9 Small Cap: Whole, Pre- and During Covid-19 Period (Jensen Ranking)

Table 4.18: Results for Jenson Ratio for Small Cap Fund Schemes

Scheme Name	W	P	D
	JENSEN RANKING	JENSEN RANKING	JENSEN RANKING
Axis Small Cap Fund	0.08749	0.06749	0.10140
DSP Small Cap Fund	0.05183	-0.06305	0.21827
Franklin India Smaller Companies Fund	0.00184	-0.12545	0.13981
HDFC small Cap Fund	-0.00352	-0.16573	0.20837
HSBC Small Cap Equity Fund	-0.00352	-0.11406	0.17248
IDBI Small Cap Fund	0.01249	-0.09205	0.16100
Kotak Small Cap Fund	0.09461	-0.03598	0.27451
Nippon India Small Cap Fund	0.04459	-0.06721	0.20144
Sundaram Small Cap Fund	0.00806	-0.09718	0.19143
Union Small Cap Fund	0.07117	-0.02215	0.20193

Source: Authors Compilation
Note: W = Whole Period, P = Pre Covid-19 Period and D = During Covid-19 Period.

Table 4.18 exhibits the results of Jensen measure for three period that is whole period, pre pandemic period and during pandemic period. It revealed that all the 10 selected small cap funds showed positive alpha which indicates superior performance of the schemes over the benchmark during the pandemic period. But only in case of Axis Small Cap Fund positive alpha is noticed in pre pandemic period i.e. 0.06749. Likewise, except HDFC small Cap Fund and HSBC Small Cap Equity Fund all other funds have given positive alpha in whole period. It means that schemes with positive alpha has been outperforming against the benchmark and schemes with negative alpha is underperforming the benchmark. From Jensen measure it can be seen that all schemes shows positive value during the pandemic period which indicate superior performance of the schemes and indicate better result on part of their fund manager to forecast security prices on time for taking better investment decision.

4.4 Out-Performance or Under-Performance

In this section, performance of a fund is evaluated versus the benchmark i.e. return on market.

4.4.1 Large Cap, Mid Cap and Small Cap : Out-Performance or Under-Performance for Whole, Pre Covid-19 and During Covid-19 Period.

Table 4.19: Results for Out-Performance or Under-Performance

Large Cap Fund Scheme Name	W		P		D	
	RP	RM	RP	RM	RP	RM
Axis Bluechip Fund	0.05203	0.06306	-0.08120	-0.10291	0.19106	0.23116
UTI - Master Share	0.05761	0.06306	-0.09241	-0.10291	0.21061	0.23116
SBI Blue Chip Fund	0.05986	0.06306	-0.09413	-0.10291	0.22212	0.23116
Mirae Asset Large Cap Fund	0.06026	0.06306	-0.09737	-0.10291	0.22070	0.23116
Kotak Bluechip Fund	0.05923	0.06306	-0.09686	-0.10291	0.21495	0.23116
IDBI India Top 100 Equity Fund	0.05747	0.06306	-0.09116	-0.10291	0.21158	0.23116
HSBC Large Cap Equity Fund	0.05985	0.06306	-0.09517	-0.10291	0.22116	0.23116
Edelweiss Large Cap Fund	0.05682	0.06306	-0.09352	-0.10291	0.20425	0.23116
Canara Robeco Bluechip Equity Fund	0.05579	0.06306	-0.09073	-0.10291	0.20183	0.23116
BNP Paribas Large Cap Fund	0.05490	0.06306	-0.08691	-0.10291	0.20118	0.23116
Mid Cap Fund Scheme Name	W		P		D	
	RP	RM	RP	RM	RP	RM
Axis Midcap Fund	0.04238	0.06306	-0.06892	-0.10291	0.14552	0.23116
BNP Paribas Mid Cap Fund	0.04394	0.06306	-0.07652	-0.10291	0.14488	0.23116
DSP Midcap Fund	0.04668	0.06306	-0.07524	-0.10291	0.16418	0.23116
Invesco India Mid Cap Fund	0.04846	0.06306	-0.08059	-0.10291	0.16835	0.23116
Kotak Emerging Equity	0.04679	0.06306	-0.07972	-0.10291	0.15837	0.23116
Nippon India Growth Fund	0.04899	0.06306	-0.08554	-0.10291	0.16489	0.23116
PGIM India Midcap Opportunities	0.05176	0.06306	-0.11074	-0.14587	0.17600	0.23116
SBI Magnum Midcap Fund	0.04630	0.06306	-0.07643	-0.10291	0.15865	0.23116
Tata Mid Cap Growth Fund	0.04951	0.06306	-0.08150	-0.10291	0.17344	0.23116
UTI Mid Cap Fund	0.04948	0.06306	-0.08565	-0.10291	0.16749	0.23116
Small Cap Fund Scheme Name	W		P		D	
	RP	RM	RP	RM	RP	RM
Axis Small Cap Fund	0.04092	0.06306	-0.06018	-0.10291	0.14751	0.23116
DSP Small Cap Fund	0.04282	0.06306	-0.07259	-0.10291	0.14168	0.23116
Franklin India Smaller Companies Fund	0.04748	0.06306	-0.07490	-0.10291	0.16756	0.23116
HDFC small Cap Fund	0.04477	0.06306	-0.07458	-0.10291	0.15037	0.23116
HSBC Small Cap Equity Fund	0.04477	0.06306	-0.08136	-0.10291	0.16279	0.23116
IDBI Small Cap Fund	0.04400	0.06306	-0.07403	-0.10291	0.14728	0.23116
Kotak Small Cap Fund	0.04393	0.06306	-0.07412	-0.10291	0.14643	0.23116
Nippon India Small Cap Fund	0.04829	0.06306	-0.08266	-0.10291	0.16268	0.23116
Sundaram Small Cap Fund	0.04593	0.06306	-0.08302	-0.10291	0.14750	0.23116
Union Small Cap Fund	0.04373	0.06306	-0.07310	-0.10291	0.14710	0.23116

Source: Authors Compilation

Note: W = Whole Period, P = Pre Pandemic Period and D = During Pandemic Period.

Performance is to be understood not just from the return's perspective but also from the risk perspective as well. It is likely that a fund has given higher returns by taking extra ordinarily high risks. So, there are several other factors which go into determining what is a good portfolio. Mutual funds are market linked investments and their performance will be subject to prevailing market conditions. While it is important to monitor fund performance on a regular basis, the investor should have objective criteria for performance evaluation. Performance of a fund should be evaluated versus the relevant fund benchmark in this study i.e. NSE-Nifty is used as market portfolio (benchmark). So the funds that has expected returns lesser than the benchmark returns are considered to be underperforming and funds whose expected return is greater than the benchmark return are considered to be outperformed the market. So here, Rp indicates the portfolio return which is arrived at as per capital asset pricing model. Rm indicates the return on market (benchmark).

It is clear from the Table 4.19 that all the select mutual fund schemes have underperformed the benchmark return. It shows incompetency of these schemes to make out a strong case for investment during the covid-19 pandemic period.

4.5 Summary

In this chapter of data analysis and interpretation whole of the analysis is divided into three section in each section data analysis and interpretation for three categories of mutual fund schemes i.e. large cap, mid cap and small cap is shown. The first section discuss the risk and return profile of the all three categories for the three period i.e. whole, pre and during. The second section discuss the performance evaluation of the all three categories for the three period i.e. whole, pre and during using three performance evaluation ratio i.e. Sharpe, Trenor and Jenson Ratio. The findings from the data analysis is discussed in detail in Chapter 5.

CHAPTER 5: FINDING, SUMMARY AND CONCLUSION

5.1 INTRODUCTION

This study mainly depend on secondary data. To examine the Large Cap, Mid Cap and Small Cap fund mutual fund schemes performance, based on crisil ranking, that is, 10 Large Cap, 10 Mid Cap and 10 Small Cap fund mutual fund open ended schemes. The performance evaluated of sampled mutual fund schemes with the help of Net Asset Value (NAV). The needed daily NAV for sampled mutual funds is extracted from Association of Mutual Funds in India (AMFI) website (www.amfi.com). A risk free rate asset has zero variability of returns. In this study 3-Month Bond Yield Treasury bills have been taken as a risk free rate which is collected. Data of daily closing price for the benchmark index (NSE-Nifty) is collected from the official web site of National Stock Exchange of India. The study covers a period of 2 years i.e. 1 April 2019 to 28 February 2021 i.e. pre and during Covid-19 pandemic. NSE-Nifty is used as market portfolio. In this study 3- Month Government Bond Yield have been used as risk free. The other related information is collected from books, journals, magazines and various websites.

For first objective data collected was analysed to see the risk and return profile of select mutual fund schemes in whole, pre and during Covid-19 pandemic. Here the data was analysed using standard deviation, beta and average return.

Second objective deals with the evaluation of the performance of select mutual fund schemes by using Sharpe Ratio, Treynor Ratio and Jensen Ratio in whole, pre and during Covid-19 pandemic.

Third objective deals with knowing whether any mutual fund scheme among the select outperformed or underperformed the market in whole, pre and during Covid-19 pandemic.

No previous studies conducted a study on performance evaluation by considering all three mutual fund schemes that is large cap, mid cap and small cap mutual fund scheme in Indian context which makes this study unique.

5.2 Findings from the analysis of the risk and return profile of select mutual fund schemes in whole, pre and during Covid-19 pandemic.

The first objective was to analyse the risk and return profile of select mutual fund schemes in whole, pre and during Covid-19 pandemic. The risk profile of the of the mutual fund scheme were analysed using standard deviation and beta. The beta value was found to be close to 0.9 in case majority large cap mutual fund scheme in whole, pre and during covid-19 pandemic period. Whereas, it was found even less than 0.7 in case of mid cap and small cap mutual fund

scheme. And from the analyses of return profile of select mutual fund schemes it was revealed that all the select mutual fund schemes have given negative returns in pre covid-19 pandemic period and in whole and during covid-19 pandemic period it was found to be positive.

5.3 Findings of evaluation of the performance of select mutual fund schemes

The second objectives tries to find which mutual fund scheme performance is better than others among the select based on ranks. In case of large cap fund it is noticed to be highest in during pandemic period in case of Edelweiss Large Cap Fund - Regular Plan - Growth option that is 0.22652 as compared to other schemes. And all the selected large cap funds schemes showed poor performance in pre pandemic period. Treynor ratio for three period that is whole period, pre pandemic period and during pandemic period and it is noticed to be highest in whole period in case of all the selected large cap funds. And all the selected large cap funds showed poor performance in pre pandemic period. Jensen measure revealed that 8 out of 10 selected large cap funds showed positive alpha which indicates superior performance of the schemes over the benchmark in during pandemic period. In case of pre pandemic period Jensen ratio is noticed to be negative only in case of SBI Blue Chip Fund-Regular Plan Growth and Kotak Bluechip Fund - Growth i.e. -0.00504 and -0.00202 respectively. All schemes have given positive alpha in whole period.

Mid cap fund scheme Sharpe ratio is noticed to be highest during pandemic period in case of all the schemes. And all the selected mid cap funds scheme showed poor performance in pre pandemic period. Treynor ratio for three period that is whole period, pre pandemic period and during pandemic period and it is noticed to be highest in during pandemic period in case of all the selected mid cap funds. And all the selected mid cap funds showed poor performance pre pandemic period. Jensen measure revealed that all the 10 selected mid cap funds showed positive alpha which indicates superior performance of the schemes over the benchmark during the pandemic period. Likewise, except SBI Magnum Midcap Fund and UTI Mid Cap Fund all other funds have given positive alpha in whole period. From Jensen measure it can be seen that all schemes shows positive value in during pandemic period which indicate superior performance of the schemes and indicate better result on part of their fund manager to forecast security prices on time for taking better investment decision.

Small Cap fund scheme Sharpe ratio is noticed to be highest during pandemic period in case of Franklin India Smaller Companies Fund, HDFC small Cap Fund, HSBC Small Cap Equity Fund, IDBI Small Cap Fund, Kotak Small Cap Fund and Nippon India Small Cap Fund that is

0.10596, 0.10032, 0.10196, 0.10266 0.10144 and 0.10401 respectively. And all the selected small cap funds showed poor performance in pre pandemic period. Treynor ratio is noticed to be highest in during pandemic period in case of all the selected small cap funds. And all the selected small cap funds showed poor performance pre pandemic period.

Jensen measure revealed that all the 10 selected small cap funds showed positive alpha which indicates superior performance of the schemes over the benchmark during the pandemic period. But only in case of Axis Small Cap Fund positive alpha is noticed in pre pandemic period i.e. 0.06749. Likewise, except HDFC small Cap Fund and HSBC Small Cap Equity Fund all other funds have given positive alpha in whole period. It means that schemes with positive alpha has been outperforming against the benchmark and schemes with negative alpha is underperforming the benchmark.

5.4 Findings of whether any mutual fund scheme among the select outperformed or underperformed the market

The third objective deals with whether any mutual fund scheme among the selected outperformed or underperformed the market. The excess return was calculated by taking the difference of return on portfolio and return on market. Return on portfolio was calculated using the CAPM formula. From the analysis it was found that all the select mutual fund schemes have underperformed the benchmark return. It shows incompetency of these schemes to make out a strong case for investment during the covid-19 pandemic period.

5.5 Conclusion

The coronavirus pandemic has shaken up the investment scenario in the country. Given the current interest rate scenario, investors are largely focusing on fixed income categories. Many experts, especially in the mutual funds sector, advise that the investors shouldn't panic and stay focused and invested in the long run. The extensive review of literature regarding the portfolio performance evaluation of mutual fund scheme during the covid-19 pandemic was carried out where we found out that there are no studies done using large cap, mid cap and small cap fund. The first objective was to analyse the risk and return profile of select mutual fund schemes in whole, pre and during Covid-19 pandemic. The high beta value was found in case majority large cap mutual fund scheme in whole, pre and during covid-19 pandemic period. Whereas, it was found turning defensive in case of mid cap and small cap mutual fund scheme. And the analyses of return profile of select mutual fund schemes revealed interesting results that all the select mutual fund

schemes have given negative returns in pre covid-19 pandemic period and in whole and during covid-19 pandemic period it was found to be positive.

The second objectives tries to find which mutual fund scheme performance is better than others among the select based on ranks. In case of large cap fund it is noticed to be highest in during pandemic period in case of one mutual fund scheme as compared to other schemes. And all the selected large cap funds schemes showed poor performance in pre pandemic period. Treynor ratio was noticed to be highest in whole period in case of all the selected large cap funds. And all the selected large cap funds showed poor performance in pre pandemic period. Jensen measure revealed large cap funds superior performance of the schemes over the benchmark in during pandemic period. In case of pre pandemic period Jensen ratio is noticed to be negative only in case of two mutual fund scheme. All schemes have given positive alpha in whole period. Mid cap fund scheme Sharpe ratio is noticed to be highest during pandemic period in case of all the schemes. And all the selected mid cap funds scheme showed poor performance in pre pandemic period. Treynor ratio was noticed to be highest in during pandemic period in case of all the selected mid cap funds. And all the selected mid cap funds showed poor performance pre pandemic period. Jensen measure revealed schemes over the benchmark during the pandemic period. Likewise, except two all other funds have given positive alpha in whole period. Small Cap fund scheme Sharpe ratio is noticed to be highest during pandemic period in case of six mutual fund scheme. And all the selected small cap funds showed poor performance in pre pandemic period. Treynor ratio is noticed to be highest in during pandemic period in case of all the selected small cap funds. And all the selected small cap funds showed poor performance pre pandemic period. Jensen measure revealed superior performance of the schemes over the benchmark during the pandemic period. Likewise, except three all other funds have given positive alpha in whole period. It means that schemes with positive alpha has been outperforming against the benchmark and schemes with negative alpha is underperforming the benchmark.

The third objective deals with whether any mutual fund scheme among the selected outperformed or underperformed the market. It shows incompetency of these schemes to make out a strong case for investment during the covid-19 pandemic period.

It can be concluded that the investor have not faced much risk as compared to the market when it comes to small cap and large cap funds. Investors are successful in reaping the positive returns even during the covid-19 pandemic period. But we got a clear evidence of funds being underperforming due to the covid-19 outbreak and during the period of pandemic. A proactive

strategy on the part of fund manager and investor can help investor from losing their investment.

5.6 Further Research

1) In the present study, three mutual fund schemes are considered for the analysis as there are investors who prefer to do investment in the other mutual fund schemes. Further research can be conducted with the large sample size.
2) With mutual fund schemes other investment avenues like stocks etc. performance evaluation can also be conducted.

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