



Analysis of Equity Midcap Mutual Fund Performance

Dr. Sangamesh Hugar

Co-ordinator

P G Department of Studies in Commerce
KLES, J.G. College of Commerce, Hubballi.

Diya L Gogad

M.Com IV Student

P G Department of Studies in Commerce
KLES, J.G. College of Commerce, Hubballi.

Abstract:

Indians have relied on real estate, gold, and bank fixed deposits for their investments. However, in the last two decades, mutual funds have emerged as an alternative and possibly superior investment option because mutual funds offer an opportunity to earn higher returns compared to these traditional investments. In addition, mutual funds offer easy access, liquidity (similar to bank deposits), more straightforward exits (as opposed to real estate investments), and remove investment management risk from the individual investor as professional fund managers manage them. Let's understand mutual funds' meaning in detail.

The present study consists of 5 mid-cap mutual funds. The time duration considered for the study is 3 years, i.e. from April-1-2019 to March 31st 2022. The following tools are used for the analysis namely Standard Deviation, Beta, Sharpe Ratio, and Treynor Ratio.

Keywords: Mutual funds, Beta, Sharpe ratio, Tryenor ratio

Introduction:

Mutual funds are a topic of interest to both researchers and buyers all over the world. Mutual funds, as a medium to long-term investment alternative, are favoured by buyers as an appropriate investment alternative.

However, with numerous marketplace fronts, the question is mutual fund selection by buyers, and the study focuses on mutual fund selection by buyers.

The portfolio of a mutual fund is more diverse than the average person's portfolio, which reduces the comparative risk and raises the comparative return. There are many available financing alternatives. Many times, buyers are unaware of the routes that offer the best returns.

According to the adage "Don't put all your eggs in one basket," investors' portfolios are as broad as feasible. Therefore, that risk needs to be diminished. Mutual funds are the best option for investors who are unsure of how to balance risk and return or vice versa.

The study's sample includes five equity mutual funds. The mutual fund schemes considered are as follows: (a) PGIM India Midcap Opportunities Fund (b) Quant Midcap Fund (c) Edelweiss Midcap Fund (d) Kotak Emerging Equity Fund (e) Nippon India Growth Fund The following tools are used for analysis in the study: NAV Returns, Standard Deviation, Beta, Sharpe Ratio, and Treynor Ratio. Though investors' preferences among fund types are defined by their investment objectives, the choice of fund based on the sponsor's reputation remains to be investigated. The reward per unit of total risk is used to evaluate funds in this model.

Objectives of the study

- To analyse the returns of various selected mutual funds.
- To analyse the risk associated with the mutual funds taken for the study.
- To analyse the Correlativity of the mutual fund returns with the market returns.
- To measure the performance of the selected mutual fund using Sharpe and Treynor.

Scope of the Study

Funds: The study considers the top five Equity- Mid Cap Mutual Funds. The following are the funds considered. Table: shows the list of selected funds

PGIM India Midcap Opportunities fund
Quant Midcap Fund
Edelweiss midcap
Kotak emerging equity fund
Nippon India growth fund

Sample Period: The study considers a time period of 3 years for the analysis.

Tools: The study uses the following tools for the analysis namely Standard Deviation, Beta, Sharpe Ratio, and Treynor Ratio.

Benchmark: The benchmark considered is NIFTY Midcap 50.

Research Methodology: In our study we have carried out the research on which mutual fund is providing higher returns by comparing the returns of different mutual funds and we have also compared whether the mutual fund can beat the market return or not.

Type of research:

The research undertaken is based on the descriptive and explanatory methods. It describes mutual funds market for midcap funds in India and explains their performance in the securities market.

Sample size:

The sample size taken for the study consists of 5 mid-cap mutual funds. The time duration considered for the study is 3 years, i.e. from April-1-2019 to March 31st 2022.

Sources of data:

Data used in study is secondary in nature. The funds selected for the research are PGIM India Midcap Opportunities fund, Quant Midcap Fund, Edelweiss midcap, Kotak emerging equity fund, Nippon India growth fund

The source of the data is secondary. The data about the daily NAV of the funds were collected from the official AMFI website

(www.amfiindia.com)

The data regarding the daily Nifty Midcap 100 was collected from the NSE website

(www.nseindia.com).

It is acquired from the official website of the company, NSE and BSE website, Magazines and other resource providing websites.

Schemes details:

1. PGIM India Midcap Opportunities Fund:



PGIM
India Mutual Fund

Fund manager: Aniruddha Naha

Vivek Sharma and

Kunal Jain

Investment strategy: The primary objective of the Scheme is to achieve long-term capital appreciation by predominantly investing in equity & equity-related instruments of mid-cap companies.

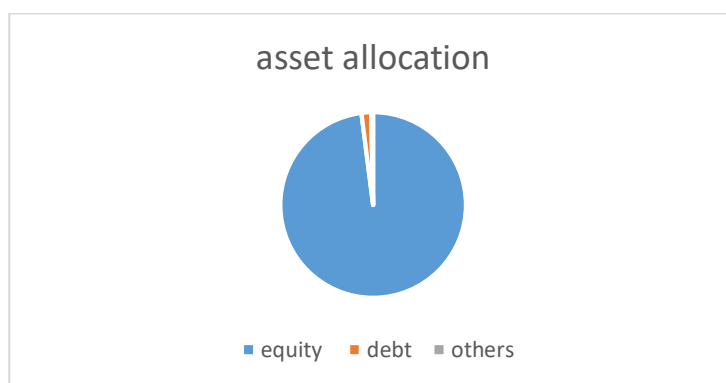
Taxability of earnings: 1. Gains are taxed at a rate of 15% (Short-term Capital Gain Tax - STCG) if units are redeemed within 1 year of investment.

2. Gains of more than Rs. 1 lakh will be taxed at a rate of 10% (Long-term Capital Gain Tax - LTCG).

Capital gains: For units redeemed after 1 year of investment, gains of up to Rs. 1 lakh accruing from those units in a financial year shall be exempted from tax.

Dividends: For Dividend Distribution Tax, the dividend income from this fund will get added to the income of an investor and taxed according to his/her respective tax slabs. Also, for dividend income in excess of Rs 5,000 in a financial year; the fund house shall deduct a TDS of 10% on such income.

Asset allocation:



Fund House	PGIM India Mutual Fund
Launch Date	02-Dec-13
Return since launch	18.60%
Benchmark	NIFTY Midcap 150 Total Return Index
Risk meter	Very High
Type	Open-ended
Assets	4,887.32 Cr(As of 31-Mar-2022)
Expense	2.14%(As of 28-Feb-2022)
Risk Grade	Average
Return Grade	High
Turnover	117.00%

2. Quant midcap fund



Fund manager: Ankit A Pande

Investment objective: The investment objective of the fund is that, "The scheme aims at providing long term capital appreciation and generating income with a diversified portfolio of Mid Cap companies"

Taxability of earnings: Gains are taxed at a rate of 15% (Short-term Capital Gain Tax - STCG) if units are redeemed within 1 year of investment.

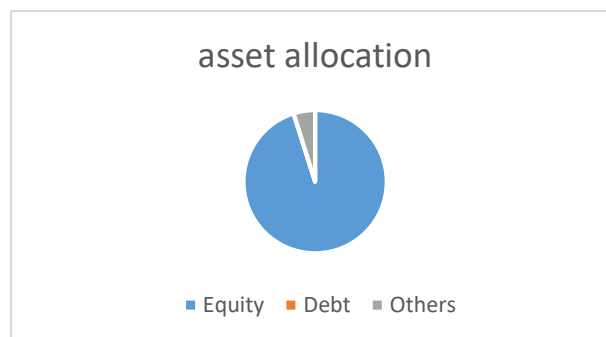
2. Gains of more than Rs. 1 lakh will be taxed at a rate of 10% (Long-term Capital Gain Tax - LTCG).

Capital gains: For units redeemed after 1 year of investment, gains of up to Rs. 1 lakh accruing from those units in a financial year shall be exempted from tax.

Dividends: For Dividend Distribution Tax, the dividend income from this fund will get added to the income of an investor and taxed according to his/her respective tax slabs.

Also, for dividend income in excess of Rs 5,000 in a financial year; the fund house shall deduct a TDS of 10% on such income.

Asset allocation:



Fund House	Quant Mutual Fund
Launch Date	09-Mar-01
Return Since Launch	12.80%
Benchmark	NIFTY Midcap 150 Total Return Index
Risk meter	Very High
Type	Open-ended
Assets	360.64 Cr(As on 31-Mar-2022)
Expense	2.62%(As on 31-Mar-2022)
Risk Grade	Above Average
Return Grade	High
Turnover	-

3. Edelweiss midcap fund



Fund manager: Trideep Bhattacharya and Sahil Shah

Investment objective: The investment objective of the fund is that the scheme aims to generate long-term capital appreciation from a portfolio that is substantially constituted of equity and equity-related securities of Mid Cap companies.

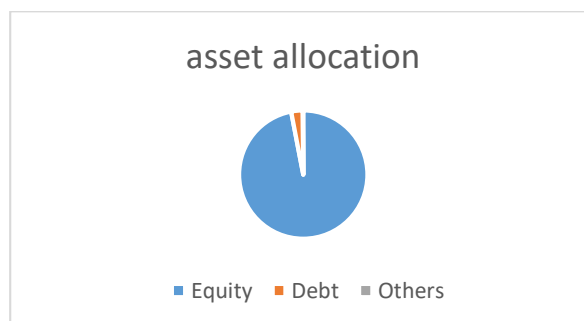
Taxability of earnings: Gains are taxed at a rate of 15% (Short-term Capital Gain Tax - STCG) if units are redeemed within 1 year of investment.

Capital gains: For units redeemed after 1 year of investment, gains of up to Rs. 1 lakh accruing from those units in a financial year shall be exempted from tax.

Dividends: For Dividend Distribution Tax, the dividend income from this fund will get added to the income of an investor and taxed according to his/her respective tax slabs.

Also, for dividend income in excess of Rs 5,000 in a financial year; the fund house shall deduct a TDS of 10% on such income.

Asset allocation:



Fund House	Edelweiss Mutual Fund
Launch Date	26-Dec-07
Return Since Launch	11.88%
Benchmark	NIFTY Midcap 150 Total Return Index
Risk meter	Very High
Type	Open-ended
Assets	1,919.99 Cr(As on 31-Mar-2022)

Expense	2.05%(As on 31-Mar-2022)
Risk Grade	Average
Return Grade	Above Average
Turnover	40.00%

4.Kotak emerging equity funds



Fund manager: Pankaj Tibrewal

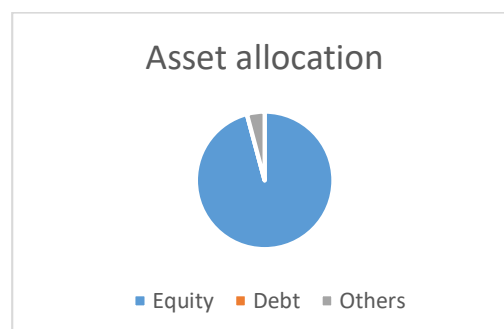
Investment objective: The investment objective of the fund is that the scheme aims to generate long-term capital appreciation from a portfolio that is substantially constituted of equity and equity-related securities of Mid Cap companies.

Taxability of earnings: Gains are taxed at a rate of 15% (Short-term Capital Gain Tax - STCG) if units are redeemed within 1 year of investment.

Capital gains: For units redeemed after 1 year of investment, gains of up to Rs. 1 lakh accruing from those units in a financial year shall be exempted from tax.

Dividends: For Dividend Distribution Tax, the dividend income from this fund will get added to the income of an investor and taxed according to his/her respective tax slabs. Also, for dividend income in excess of Rs 5,000 in a financial year; the fund house shall deduct a TDS of 10% on such income

Asset allocation:



Fund House	Kotak Mahindra Mutual Fund
Launch Date	30-Mar-07
Return since launch	14.09%
Benchmark	NIFTY Midcap 150 Total Return Index
Risk meter	Very High
Type	Open-ended
Assets	18,634.65 Cr(As on 31-Mar-2022)
Expense	1.72%(As on 31-Mar-2022)
Risk Grade	Below Average
Return Grade	Above Average
Turnover	3.37%

5. Nippon India growth fund



Fund manager: Tejas Sheth

Dhrumil Shah

Manish Gunwani.

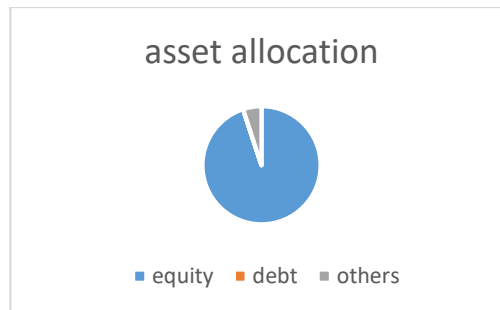
Investment strategy: The primary objective of the Scheme is to achieve long-term capital appreciation by predominantly investing in equity & equity-related instruments of mid-cap companies.

Taxability of earnings: 1. Gains are taxed at a rate of 15% (Short-term Capital Gain Tax - STCG) if units are redeemed within 1 year of investment. 2. Gains of more than Rs. 1 lakh will be taxed at a rate of 10% (Long-term Capital Gain Tax - LTCG).

Capital gains: For units redeemed after 1 year of investment, gains of up to Rs. 1 lakh accruing from those units in a financial year shall be exempted from tax.

Dividends: For Dividend Distribution Tax, the dividend income from this fund will get added to the income of an investor and taxed according to his/her respective tax slabs.

Also, for dividend income in excess of Rs 5,000 in a financial year; the fund house shall deduct a TDS of 10% on such income.

Asset allocation:

Fund House	Nippon India Mutual Fund
Launch Date	08-Oct-95
Return since launch	22.17%
Benchmark	NIFTY Midcap 150 Total Return Index
Risk meter	Very High
Type	Open-ended
Assets	12,015.01 Cr(As on 31-Mar-2022)
Expense	1.76%(As on 31-Mar-2022)
Risk Grade	Average
Return Grade	Above Average
Turnover	86.00%

Data Analysis and Interpretation**Tools used for analysis****Measures of Return (Portfolio Returns)**

The returns from an investment is calculated by comparing the cost paid to acquire the asset (outflow) or the starting value of the investment to what is earned from it (inflows) and computing the rate of return. The inflows can be from periodic pay-outs such as interest from fixed income securities and dividends from equity investments and gains or losses from a change in the value of the investment. The calculation of return for a period will take both the income earned and gains/loss into consideration, even if the gains/loss has not been realized.

$$NAV = \frac{(\text{Later Value} - \text{Initial Value}) * 100}{\text{initial value}}$$

Standard Deviation:

Standard deviation is a statistic used in finance that, when used to calculate an investment's yearly rate of return, provides information about the investment's historical volatility. The difference between each price and the mean, which reveals a wider price range, increases as the standard deviation of securities increases.

$$\sigma = \sqrt{\frac{\sum x^2}{n} - \left(\frac{\sum x}{n}\right)^2}$$

n = No. of observations σ = Standard Deviation \bar{x} = mean value of the data

Beta

Beta is based on the Capital Asset Pricing Model (CAPM). Beta compares the periodic return fluctuations in a scheme to periodic return fluctuations in a diversified stock index (representing the market) during the same time period. By definition, the beta of the diversified stock index is 1. Companies or plans with beta values greater than 1 are seen as being riskier than the market.

$$\beta = \frac{\text{Covariance (Fund Return and Market Return)}}{\text{Variance of Market}}$$

Sharpe Ratio

The Sharpe ratio is a measurement of a portfolio's risk premium per unit of risk and is calculated as the total return of the portfolio less the risk-free rate divided by the portfolio's standard deviation.

A widely popular way to quantify risk-adjusted returns is the Sharpe ratio.

According to Sharpe, investors are most worried about the fund's overall risk, hence this model rates funds based on their reward per unit of total risk.

$$\text{Sharpe Ratio} = \frac{(R_p - R_f)}{\sigma}$$

Treynor Ratio:

Jack L. Treynor developed the Treynor ratio, which contrasts the portfolio risk premium with the systematic risk of the portfolio as determined by beta. The market's Treynor ratio would be its returns less the risk-free rate.

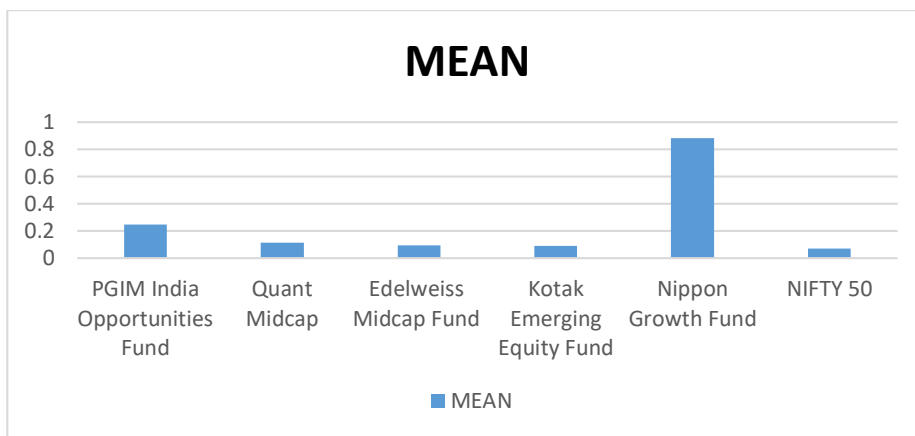
A low and negative Treynor's index is a sign of poor performances, whilst a high and positive Treynor's index depicts superior risk-adjusted performance of the fund.

$$\text{Treynor Ratio} = \frac{R_p - R_f}{\beta}$$

Return on schemes:

$$NAV = \frac{(\text{Later Value} - \text{Initial Value}) * 100}{\text{initial value}}$$

FUND NAME	MEAN
PGIM India Opportunities Fund	0.247
Quant Midcap	0.116
Edelweiss Midcap Fund	0.093
Kotak Emerging Equity Fund	0.091
Nippon Growth Fund	0.881
NIFTY 50	0.07



Interpretation:

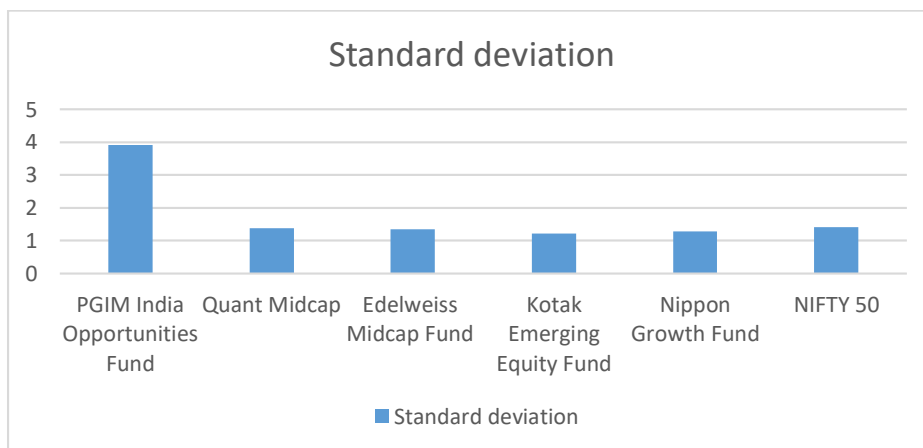
The above data in the table and graph shows the average return of the selected sample funds with NIFTY Midcap 50 benchmark index for a sample period of 3 years NAV from April1, 2019 to March 31, 2021.

Nippon India Growth Fund has higher portfolio return than that of other funds. It means that investing in Nippon India Growth Fund will give more returns than investing in other funds. None of the funds have shown negative returns.

Standard deviation:

$$\sigma = \sqrt{\frac{n\sum x^2}{n} - \left(\frac{\sum x}{n}\right)^2}$$

FUND NAME	Standard deviation
PGIM India Opportunities Fund	3.91
Quant Midcap	1.37
Edelweiss Midcap Fund	1.35
Kotak Emerging Equity Fund	1.21
Nippon Growth Fund	1.28
NIFTY 50	1.41



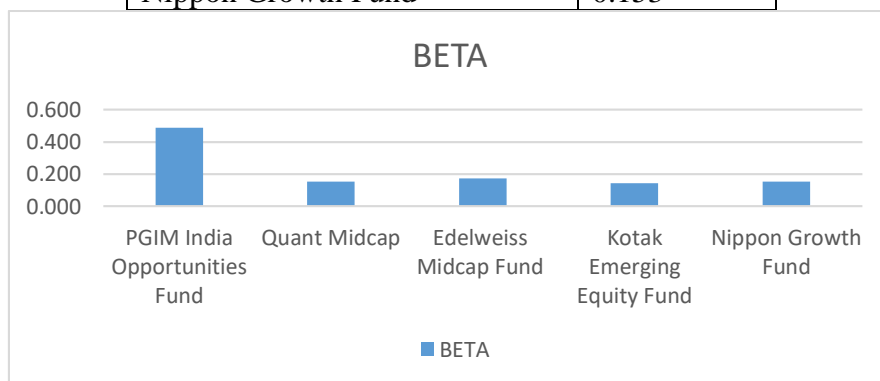
Interpretation:

The data in the above given graph indicates that amongst all the sample funds PGIM India Midcap Opportunities fund has the highest standard deviation at 3.91 and Kotak Emerging Equity Funds lowest standard deviation at 1.21. It indicates greater volatility in the returns and greater risk in PGIM India Midcap Opportunities fund and lowest in Kotak Emerging Equity Funds.

Beta:

$$\beta = \frac{\text{Covariance (Fund Return and Market Return)}}{\text{Variance of Market}}$$

FUND NAME	BETA
PGIM India Opportunities Fund	0.488
Quant Midcap	0.155
Edelweiss Midcap Fund	0.174
Kotak Emerging Equity Fund	0.143
Nippon Growth Fund	0.153

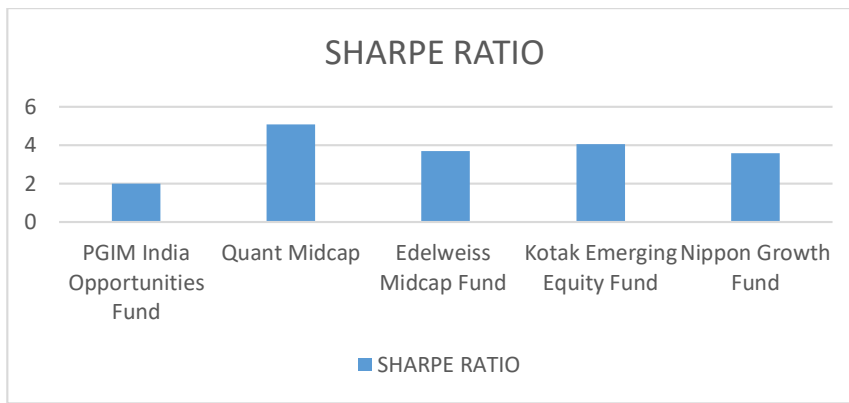
**Interpretation:**

From the above graph we can understand that the beta of PGIM India Midcap Opportunities fund is highest among the sample funds at 0.49. Kotak Emerging Equity Fund has the lowest at 0.14. Any beta less than 1 denotes lower volatility. All the sample funds have a lower volatility and are less risky.

Sharpe Ratio:

$$\text{Sharpe Ratio} = \frac{(R_p - R_f)}{\sigma}$$

FUND NAME	SHARPE
PGIM India Opportunities Fund	2.00
Quant Midcap	5.09
Edelweiss Midcap Fund	3.69
Kotak Emerging Equity Fund	4.05
Nippon Growth Fund	3.60



Interpretation:

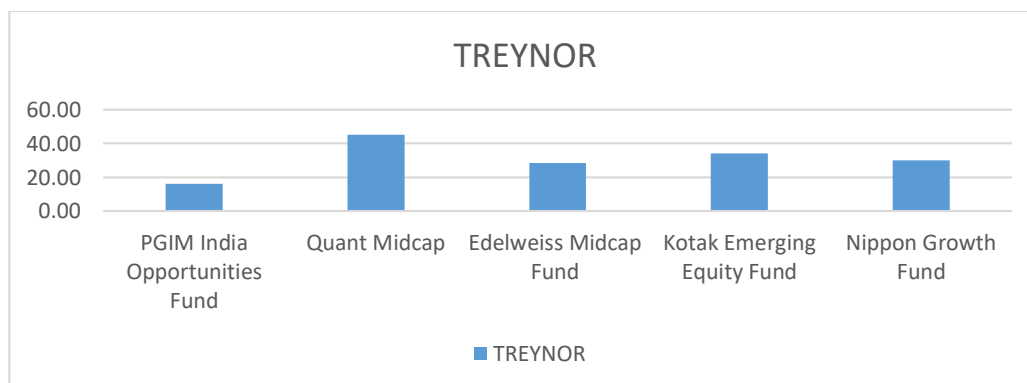
Higher the Sharpe Ratio, better the scheme is considered to be.

From the above graph the Sharpe ratio of Quant Midcap Fund is highest at 5.09, when compared to the other funds. It indicates how well mutual fund scheme has performed in excess of the risk-free return that means, Quant Midcap Fund is less volatile and less risky, whereas PGIM India Midcap Opportunities fund at 2.00, is more volatile and more risky.

Treynor’s Ratio:

$$\text{Treynor Ratio} = \frac{R_p - R_f}{\beta}$$

FUND NAME	TREYNOR
PGIM India Opportunities Fund	16.07
Quant Midcap	45.17
Edelweiss Midcap Fund	28.54
Kotak Emerging Equity Fund	34.26
Nippon Growth Fund	30.13



Interpretation:

Treynor's ratio is a measure reward to volatility. Higher the Treynor's ratio, better the scheme is considered to be. Amongst the sample funds, Quant Midcap fund is the highest, hence providing better returns and PGIM India Midcap Opportunities Fund has the lowest, providing lesser returns in comparison to others.

Findings:

- Majority of the sample funds have yielded returns above the benchmark in the period of 3 years 2019-2021. If we compare the returns of the sample period with other funds Nippon India Growth Fund has given the highest return. The lowest return among all the other funds was given by Kotak emerging equity fund. But all the funds performed better than the benchmark.
- Most of the selected funds have shown volatility and risk above that of the market. PGIM India Midcap Opportunities fund has the highest standard deviation at 3.91 and Kotak Emerging Equity Funds lowest standard deviation at 1.21. Except, PGIM India Midcap Opportunities fund all the sample funds have shown risk lesser than the benchmark.
- All the sample funds have shown a Beta less than 1. Beta is highest in PGIM India Midcap Opportunities Fund and Beta is lower than others in Kotak Emerging Equity Fund.
- The Sharpe ratio of the fund's performance compared with other funds in the sample period. All the Sample funds have shown positive values of Sharpe ratio. The highest excess return generated for the extra risk taken is by Quant Midcap fund, whereas PGIM India Midcap Opportunities fund is the lowest.
- The Treynor ratio of fund performance compared with other funds in the sample period. Most of the funds have shown a risk whereas low values among other funds is shown by PGIM India Midcap Opportunities Fund in the sample period. Sample funds have shown the highest values in the Quant Midcap Fund, where there is an excess return given for the systematic risk taken in this fund.

Conclusion:

The objectives set for the report have been successfully completed. A study on Equity Mutual Funds of the sample shows that majority of the funds have a yielded a good and high returns even though they have a considerable amount of risk associated with them

The selected funds have been evaluated using average returns, standard deviation, beta, Sharpe ratio, and Treynor ratio measure and by analysing each fund with each model it is clear that the only fund which has

emerged successful in majority of the analysis is Quant Midcap fund for investment and it is comparatively better in the sample funds.

The empirical study conducted on a sample of 5 equity mutual funds and for a sample period of 3 financial years from 2019-2022 showed that the selected funds have been properly diversified and the units of these funds have been selected prudently. Hence we can conclude by saying that whatever returns the funds have been earning is because of the diversification or selectivity and also because of some other market forces.

References:

1. Agarwal, S., & Mirza, N. (2017). *A study on the risk-adjusted performance of mutual funds industry in India. Review of innovation and competitiveness*, 3(1), 75-94. <https://doi.org/10.32728/ric.2017.31/4>
2. Ashraf, S. H., & Sharma, D. (2014). *Performance Evaluation of Indian Equity Mutual Funds against Established Benchmarks Index. International Journal of Accounting Research*, 2(1), 1000113. <https://doi.org/10.4172/2472-114X.1000113>
3. Badrizadeh M., & Paradi J.C. (2020). *Pension Funds and Mutual Funds Performance Measurement with a New DEA (MV-DEA) Model Allowing for Missing Variables. In: Charles V., Aparicio J., Zhu J. (eds) Data Science and Productivity Analytics. International Series in Operations Research & Management Science*, 290, 391-413. https://doi.org/10.1007/978-3-030-43384-0_14
4. Busse, J.A., Chordia, T., Jiang, L., & Tang, Y. (2020). *Transaction Costs, Portfolio Characteristics, and Mutual Fund Performance, Management Science, Forthcoming*. <https://doi.org/10.1287/mnsc.2019.3524>
5. Cujean, J. (2020). *Idea sharing and the performance of mutual funds. Journal of Financial Economics*, 135(1), 88-119. <https://doi.org/10.1016/j.jfineco.2019.05.015>
6. Damayanti, S.M. & Cintyawati, C. (2015). *Developing an Integrated Model of Equity Mutual Funds Performance: Evidence from the Indonesian Mutual Funds Market. GSTF Journal on Business Review (GBR)*, 6(2), 14-21. <https://doi.org/10.7603/s40706-015-0016-3>
7. Kumar, V., & Kumar, A. (2012). *Construction of Appropriate Benchmark Index for Mutual Funds: Specific Reference to Tax Saver Funds. International Journal of Financial Management*, 2(1), 74-90. <http://www.publishingindia.com/ijfm/30/construction-of-appropriate-benchmark-index-for-mutual-funds-an-empirical-analysis-with-specific-reference-to-tax-saver-funds-elss/130/1032/>
8. Nandhini, R. & Rathnamani, Dr. V. (2017). *A Study on the Performance of Equity Mutual Funds (With special reference to equity large cap and mid cap mutual funds). IOSR Journal of Business and Management*, 19(2), 67-72. <https://doi.org/10.9790/487X-1902026772>
9. Narayanasamy, Dr. R. V. & Rathnamani. (2013). *Performance Evaluation of Equity Mutual Funds (On Selected Equity Large Cap Funds). International Journal of Business and Management Invention*, 2(4), 18-24. <https://doi.org/10.5281/zenodo.1252910>
10. Pandow, B. A. (2017). *Performance of Mutual Funds in India. International Journal of Research in IT, Management and Engineering*, 7(1), 14-23. http://indusedu.org/pdfs/IJRIME/IJRIME_1035_24314.pdf
11. Philips, C. B., & Kinniry, F. M. Jr. (2010). *Mutual fund ratings and future performance. Vanguard Research, Working research paper, No. 06/2010*. https://www.stat.berkeley.edu/~aldous/157/Papers/mutual_funds.pdf
12. Rangasamy, Dr. S., & Sathiyapriya, M. (2017). *Trend and performance of selected mutual funds. International Research Journal of Engineering and Technology*, 4(2), 1651-1654. <https://www.irjet.net/archives/V4/i2/IRJET-V4I2324>.
13. *Mutual Fund Performance Evaluation-*
<https://thismatter.com/money/investments/portfolio-performance.htm>
Net Asset Values <https://www.advisorkhoj.com/>
Risk Free Rate of Return (Treasury Bill Rate)
https://rbi.org.in/Scripts/BS_NSDPDisplay.aspx?param=4#mainsection
Company Profile <https://mf.nipponindiaim.com/>
NIFTY Index data
https://www1.nseindia.com/products/content/equities/indices/historical_index_data.htm