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Performance Evaluation Of Equity Based National Pension Schemes In India-In Special Reference To Tier-1 Schemes

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ABSTRACT:

The performance of India's equity-based Tier-1 National Pension Schemes (NPS) is assessed in this study for the years 2018 through 2022. It examines the market correlations, risk management, and financial returns of the best-performing pension fund managers using secondary data. The results show that returns have increased significantly for all listed managers, with LIC leading the way and HDFC, Kotak, UTI, and ICICI following. All managers had positive Sharpe ratios, which show returns over the risk-free rate in relation to expected risk, despite their differing levels of success. Based on its highest Treynor ratio, Kotak was the greatest performer in terms of risk-adjusted returns per unit of systematic risk. Nonetheless, weak positive correlations were found with the S&P 500 index, indicating a restricted degree of linkage with market movements. The research highlights the significance of continuous observation and recommends implementing effective tactics, such as risk optimization and diversification, that have been seen in top-performing managers. It also urges more study to overcome shortcomings and improve comprehension of equity-based pension plans in India. The present study provides significant perspectives for investors and policymakers, hence facilitating the progress of retirement planning and financial security in India.

Key words: National Pension Schemes(NPS), Equity-based Tier-1, Scheme E, Pension Fund Managers (PFMs),Performance Evaluation, Risk management.

INTRODUCTION:

National Pension System (NPS) was introduced by the Central Government to enable people obtain income in the form of pension to meet their retirement needs. Employees in the public, private, and even unorganized sectors are eligible for this pension plan, except for those in the military forces. The program encourages people to regularly invest in a pension account during their employment. The subscribers may withdraw a certain portion of the corpus upon retirement and the remaining amount will be paid to you as an NPS account holder as a monthly pension. It is among the most effective strategies for increasing retirement income and reducing taxes. Under the PFRDA Act of 2013, the Pension Fund Regulatory and Development Authority (PFRDA) oversees and manages NPS.NPS is commercially managed by professional fund managers. The value of the pension fund corpus is market-to-market determined and accordingly the rate of return is market determined. NPS offers two types of accounts to its subscribers: Tier I-the primary pension account with restrictions on withdrawals and utilisation of accumulated corpus. All the tax breaks that NPS offers are applicable only to the Tier I account.

Tier II-in order to introduce some liquidity to the scheme, the PFRDA allows for a Tier II account where subscribers with pre-existing Tier I accounts can deposit and withdraw money as and when they want. It is an investment account, similar in mutual fund characteristics, but offers no Exit load, commissions and good returns.

Scheme E of the NPS permits the PFMs to allocate investment in equity stocks to an extent of 75% and trade on a high risk return approach. This scheme is suitable for young subscribers who can take high risks and enjoy the high returns as they have sufficient time till retirement. The top five PFMs performance under Scheme E Tier-1 is evaluated in this study.

Review of literature

1. **Parmod Kumar (2017)**: In this study the Equity Scheme (Tier-I) performance was analysed using various measures, which indicates SBIPF, the largest asset holder, with returns falling short of the benchmark. Negative indicators, including a lower Sharpe Ratio, underscore its performance. LICPF, Reliance PF, and KOTAK PF also exhibit unsatisfactory performance. Conversely, HDFC PF and UTIRSL outperform the benchmark, showcasing positive indicators. ICICI PF's performance is satisfactory, generating higher returns than the benchmark with affirmative indicators. Urgent improvements are imperative for SBIPF, LICPF, Reliance PF, and KOTAK PF to align their performance more closely with benchmark returns.

2. **K. Seethal and B. Menaka (2018)**: This paper analysed the importance of NPS for retirement planning, it's structure and the taxation and GST aspect of National Pension scheme. It revealed that the recent amendments made by the government such as removal of GST on the annuity value and 40% tax deduction on the total fund is making the scheme more interesting and popular among the investors, and the individuals who lack knowledge about financial market can easily access NPS by approaching the designated private or public sector banks.

3. **Krishna Murari (2020)**: The findings of the study imply the comparison of the performance of all the pension fund managers listed under various NPS schemes in India. The analysis revealed that LIC Pension Funds Ltd has dominated and performed better under Sharpe and Jensen's performance measures. However HDFC pension fund managers outperformed the other PFMs in the equity and fixed income segment of NPS schemes.

4. **Deepak Mohanty (2022)**: This working paper explores India's pension sector (NPS plus APY) which provides a flexible mode of old-age- income security not only for salaried employees but also to the common person. The future expansion in NPS is expected to emanate from the private sector - both the salaried and self-employed. Steps at enhanced pension-literacy both of the subscribers and intermediaries coupled with nudge from the regulator and the government along with encouragement to young adults to join pension scheme early would accelerate movement towards pension society.

SCOPE OF THE STUDY

The primary objective of this research is to assess the performance of India's Tier-1 equity-based National Pension Schemes (NPS) from 2018 to 2022, a period of five years. Under Scheme E of the NPS, which permits a sizable allocation to equity stocks, it evaluates the financial returns, risk management techniques, and market correlations of the top-performing pension fund managers. Five of the largest pension fund managers are included in the analysis: ICICI, Kotak, UTI, HDFC, and LIC. Performance indicators including trend percentages, Treynor ratios, Sharpe ratios, and correlations with the S&P 500 index are provided. The study looks at the significance of the NPS in retirement planning, and performance comparisons of pension fund managers. Secondary data is gathered for the research approach from reliable sources like the NPS trust organization, and financial websites like Moneycontrol.com. For analysis and interpretation, tools like Treynor ratios, Sharpe ratios, and trend percentages are used. The study's conclusions, limits, and recommendations add to the continuing conversation on improving the efficacy and sustainability of equity-based national pension plans by offering insightful information to stakeholders, investors, and policymakers in India's pension industry.

STATEMENT OF THE PROBLEM:

The performance and evaluation of equity-based national pension schemes in India constitute a critical area of concern. As individuals increasingly rely on these schemes for their retirement planning, understanding the effectiveness and efficiency of such equity-driven investment strategies becomes vital. The statement of the problem revolves around the need to assess the returns, risks, and overall performance of these schemes, considering the dynamic nature of financial markets and the diverse investment landscape in India. Factors such as market volatility, regulatory changes, and the impact of global economic trends further underline the complexity of evaluating equity-based national pension schemes. Therefore, a comprehensive examination of these factors is essential to inform both policy decisions and individual investors, ensuring the sustainability and effectiveness of pension schemes in promoting financial security for the aging population.

OBJECTIVES OF THE STUDY:

1. To evaluate the financial returns of the pension scheme.
2. To analyse the performance of the schemes in terms of return and risk management.
3. To assess the overall effectiveness of selected equity based National Pension Schemes.

RESEARCH METHODOLOGY:

This study is an Analytical research. Analytical research is a type of methodology that involves the systematic examination and interpretation of data or information to uncover patterns, relationships, or insights. Analytical research often employs quantitative methods, such as statistical analysis, to measure and analyse data.

Data Collection:

The study is based on secondary data to examine the performance of the scheme and the data was collected from NPS trust organisation, Moneycontrol.com, BSEIndia.com, and macrotrends.net.

Period of the Study:

The study mainly focuses on over a period of 5 years from 2018 to 2022 and data for the period was collected.

Tool Used:

1. Trend percentage: Trend percentages, also referred to as index numbers, help you to compare financial information over time to a base year or period. These trend percentages indicate the changes taking place highlight the direction of these changes.

2. Sharpe ratio: The Sharpe ratio compares the return of an investment with its risk. It measures by dividing a portfolio's excess returns by a measure of its volatility to assess risk-adjusted performance. Excess returns are those above an industry benchmark or the risk-free rate of return The calculation may be based on historical returns or forecasts. The calculation approach used for this ratio is (Ri − Rf)/si. Here, si is the volatility in the returns of the pension fund.

3. Treynor Ratio: The Treynor ratio, also known as the reward-to-volatility ratio, is a performance metric for determining how much excess return was generated for each unit of risk taken on by a portfolio. The Treynor ratio is reliant upon a portfolio's beta—that is, the sensitivity of the portfolio's returns to movements in the market—to judge risk.

4. Correlation: Correlation is a statistical tool used to analyse the relationship between two variables. Correlation tool is used to analyse the relationship between the returns of the PFMs and the index market returns of S&P500.

LIMITATIONS OF THE STUDY:

1. The study may be biased as only the top five performing pension fund managers have been used for analysis.
2. The study is conducted with limited time duration and limited tools.

ANALYSIS OF THE DATA:

Table 1. Trend Percentages of financial year returns

Pension Fund Managers	Financial Year Return(in%)		Trend %
	2018	2022	
ICICI	9.95	19.6	196.98%
Kotak	11.2	19.73	176.16%
UTI	11.18	18.24	163.15%
HDFC	11.48	19.14	166.72%
LIC	9.05	20.4	225.41%

INTERPRETATION:

All the listed equity-based national pension schemes in India experienced substantial growth in returns from 2018 to 2022.This reflects effective management strategies and investment decisions. LIC unveiled the highest growth and the trend percentage of 225.41% highlights exceptional performance and potentially superior investment strategies.

Table 2. Sharpe ratio of PFMs under Scheme E Tier-1

Pension Fund Managers	Average Excess Returns	Volatility of returns	Sharpe Ratio
ICICI	15.94	31.45	0.51
Kotak	15.70	30.63	0.51
UTI	15.75	31.86	0.49
HDFC	16.33	29.61	0.55
LIC	15.39	32.85	0.47

INTERPRETATION:

Among the listed pension fund managers HDFC has the highest Average Excess Returns and also the lowest volatility of returns, indicating that it has stable returns. It also maintains the best Sharpe ratio (0.55) suggesting it provides best risk-adjusted returns among the listed managers.

Table 3. Treynor Ratio of PFMs under Scheme E Tier-1

Pension Fund Managers	Average Excess Returns(in%)	Beta	Treynor Ratio
ICICI	16.08	2.12	7.60
Kotak	15.84	1.40	11.28
UTI	15.89	1.74	9.15
HDFC	16.47	1.70	9.67
LIC	15.53	2.14	7.27

INTERPRETATION:

Kotak has the highest Treynor Ratio of 11.28 indicating it generated highest risk-adjusted returns per unit of systematic risk. ICIC and LIC have similar ratios of 7.27 and 7.60 suggesting comparable risk-adjusted returns. Kotak has the lowest beta value suggesting relatively lower volatility compared to the market.

Table 4. Showing correlation between S&P500 and listed Pension Fund Managers

		S&P500	ICICI
S&P500	Pearson correlation	1	0.226*
	Sig. (2-tailed)		0.714
	N	5	5
ICICI	Pearson correlation	0.226*	1
	Sig. (2-tailed)	0.714	
	N	5	5

		S&P500	LIC
S&P500	Pearson correlation	1	0.212*
	Sig. (2-tailed)		0.733
	N	5	5
LIC	Pearson correlation	0.212*	1
	Sig. (2-tailed)	0.733	

	N	5	5

		S&P500	HDFC
S&P500	Pearson correlation	1	0.227*
	Sig. (2-tailed)		0.713
	N	5	5
HDFC	Pearson correlation	0.227*	1
	Sig. (2-tailed)	0.713	
	N	5	5

		S&P500	UTI
S&P500	Pearson correlation	1	0.240*
	Sig. (2-tailed)		0.697
	N	5	5
UTI	Pearson correlation	0.240*	1
	Sig. (2-tailed)	0.697	
	N	5	5

		S&P500	Kotak
S&P500	Pearson correlation	1	0.205*
	Sig. (2-tailed)		0.741
	N	5	5
Kotak	Pearson correlation	0.205*	1
	Sig. (2-tailed)	0.741	
	N	5	5

INTERPRETATION:

All the listed pension fund managers display weak positive relationship with the returns of the S&P500 index. UTI displays a stronger positive relationship (0.240) with the returns of the S&P500 index compared to ICICI, LIC, Kotak and HDFC. While Kotak shows the weakest positive relationship (0.205) among the listed pension fund managers. The correlation of the listed pension fund managers is not significant at the significance level of 0.05.

FINDINGS OF THE STUDY

The returns on all listed pension fund managers increased significantly between 2018 and 2022 and demonstrated positive trends, indicating significant improvements in performance over the study period. LIC exhibited the highest growth in returns highlighting exceptional performance, followed by HDFC, Kotak, UTI, and ICICI.

ICICI, Kotak, UT, HDFC and LIC all have positive Sharpe ratios, indicating that they generated returns above the risk-free rate relative to the level of risk taken. LIC has the lowest Sharpe ratio, suggesting relatively lower risk-adjusted returns compared to other pension fund managers.

The Treynor ratio indicates that, of the listed pension fund managers, Kotak achieved the highest average excess returns, while HDFC generated the lowest. With a Treynor ratio of 11.28, Kotak appears to have achieved the highest risk-adjusted returns per unit of systematic risk which demonstrates its capacity to provide outstanding returns while skilfully managing risk, while LIC had the lowest Treynor ratio.

There were weak positive correlations found between the returns of the S&P 500 index and all listed pension fund managers. UTI demonstrated the most robust positive correlation (0.240) with the S&P 500 index returns, suggesting a comparatively elevated association with the market patterns. At the significance level of 0.05, the listed pension fund managers' correlation was not significant, indicating a weak relationship with the market movements.

SUGGESTIONS

As the study indicates that Kotak outperformed other fund managers in terms of risk-adjusted returns, other fund managers should think about examining Kotak's diversification strategy and implementing comparable strategies into their own investment approaches. In addition to perhaps increasing earnings, this could assist in reducing risk. LIC and other fund managers with lower Sharpe ratios might concentrate on raising their risk-adjusted returns. Re-evaluating their approach to asset allocation, optimzing the process of building a portfolio, or using more advanced risk management strategies could all be necessary to improve performance in relation to risk. As highlighted by the study, all mentioned PFMs returns increased dramatically. It is essential to continue monitoring these PFMs' performance in order to guarantee their further expansion and spot any new trends or difficulties in the field of equity-based national pension schemes. Further financial databases or primary research, such as surveys or interviews with industry experts, could offer more thorough insights into the operation and assessment of India's equity-based national pension schemes. Future research could try to address the limitations of this study, which include focusing only on the top five performing pension fund managers and using limited techniques. To gain a deeper understanding of scheme performance and risk management, this may involve utilizing more sophisticated analytical approaches or performing a broader analysis that covers a bigger sample of PFMs.

CONCLUSION

This study evaluates the performance, risk management, and market correlation of equity-based national pension schemes in India, with a special focus on Tier-1 schemes. For the top-performing pension fund managers, the study examined their financial returns, correlation with the S&P 500 index, and risk-adjusted performance indicators including Treynor and Sharpe ratios. The results of this research show that all listed pension fund managers' returns increased significantly between 2018 and 2022, with LIC showing the most gain and HDFC, Kotak, UTI, and ICICI following closely behind.

All listed fund managers had positive Sharpe ratios, which show gains over the risk-free rate in relation to the amount of risk assumed, despite differences in performance. With the highest Treynor ratio, Kotak was the best performer in terms of risk-adjusted returns per unit of systematic risk. The returns of the S&P 500 index and the listed pension fund managers did, however, show only minor positive correlations, indicating a limited relationship with changes in the market.

The study's conclusion underlines the significance of ongoing assessment and monitoring of equity-based national pension plans to guarantee their effectiveness in fostering seniors' financial security. It offers recommendations on how to perform better, including using risk management techniques, diversification plans, and portfolio development procedures that are optimized. It also highlights the need for increased study to overcome shortcomings and investigate new perspectives on scheme performance and risk management using more complex analytical techniques and comprehensive analysis. All things considered, the study advances knowledge about equity-based pension plans in India and helps investors and policymakers alike with their retirement planning.

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