

A Study on The Role of Artificial Intelligence Robo Advisors in Mutual Fund in India

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ABSTRACT

The research paper explores the role of Artificial intelligence Robo advisors in Indian mutual fund industry highlighting the performance of mutual products on Robo advisor. This study aims to analyze the correlation between Value of asset and earnings and the investment returns based on risk adjusted measures such as Sharpe ratio, Treynor ratio and beta. 5-star and 4-star rating mutual products of top 2 Robo advisory company have selected and the study concluded that Robo advisory in India acts as a supporting component rather than substitute for financial advisors.

Keywords: Artificial intelligence, Robo advisor, Sharpe ratio, Treynor ratio, Beta

INTRODUCTION

With a mouse click, nowadays our investments are done. Robo advisor can be stated as financial advisors that provides financial advice or in selecting the portfolio management that is given online with minimal human intervention. It is regarded as a computational model which are used to comprehend the investor demand and generate portfolio based on the capacity of their risk bearing. The Digital Investment Advisor tend to use machine learning and artificial intelligence, the factor is that they use rule-based logic condition. In recent times in India there has been a few rounds of funding that has been emerging in Robo advisory space.

The top 10 Robo advisory startups in India are:

- 1) Oro wealth
- 2) Piggy
- 3) Fund expert
- 4) Balance
- 5) Spenny

- 6) Jarvis
- 7) Wright Research
- 8) 5 nce
- 9) Goalwise
- 10) Finbingo

of the above mentioned top 10 Robo advisory company's products of or wealth and Piggy have been selected for the study.

REVIEW OF LITERATURE

Kishore Kumara Das et al (2020) made an empirical study on the effect of fast changing financial technologies and their consequences on investment services industry in India. The study explored various factors such as the financial technology have positive effect and investment holdings has shown a gradual hike in past. The main prospective of this study is to illuminate the breakthrough in block chains, Artificial intelligence and big data analytics are revolutionizing the conventional processes, assuring greater transparency and efficiency in the financial service ecosystem. It has also contributed to the gaining of knowledge and insights on financial technologies and its outcome on financial industry, hurdles and growth potential. Finally, the paper emphasizes the need for coordinated measures between Fintech firms, regulators and financial institution to develop a resilient, equitable and forward-looking financial framework in India Chandani et al (2021) in her study explored that the excel automated solutions are facing difficulty in already established digital wealth management. Digital advisors are becoming more popular in recent times. The study focused on understanding the awareness of Robo advisors among the young people in India and it review the obstacles to implement such as credibility problem, apparent difficulty and inadequate technological proficiency which stands as major deterrent for the acceptance of these innovations that happens in technologies among young people. The findings conclude that enhancing the technology wealth management application can be a greater contribution in developing an economically savvy and tech literate generations.

Ankita Bhatia et al (2021) in her study analyzed the smart investment platform in the management of wealth. It is a virtual advisory platform that provide services for the investors in handling their wealth by suggesting portfolio allocation which are based on certain algorithms. Features such as cost-effectiveness, trust, data security, behavioral bias and investor's sentiments are the important point that impact the perception of the investors. To say that digital advisors for the Indian

stock market offer supplementary services instead of replacing them. The research also explores that growth potential as a significant advancement as this system can provide for a large number of stakeholders concurrently without diminishing service standards. The study makes a greater suggestion that the partnership between innovative tech platforms and classic financial institutions can integrate technology and trust instill confidence in investors in smart investment environment.

Indu Nain et al (2023) evaluated the current state of Indian Robo advisory services and emphasizing the problem faced by the service providers. In the business area of tech-driven financial advisory services in India, to make note of entry of both local Fin tech new ventures and worldwide entities which has increased market rivalry. It accentuates the minimal personalization furnished by many Indian automated wealth managers which can affluent investors seeking customized investment solutions. The study proposes emerging avenues for automated investment advisors to enhance and explore into areas like post work financial management, optimization in tax, environment, social and governance investing to address the investor expectations. It concludes that E- advisory are simplicity and accessibility, time efficiency and operational transparency.

OBJECTIVES OF THE STUDY

1. To assess the correlation between the net value and returns for 1st year, 2nd year and 3rd year.
2. To interpret the relationship between the Sharpe ratio, Treynor ratio and beta in determining risk adjusted performance.

RESEARCH METHODOLOGY

Secondary data were used for the study. Data collected from publicly available reports and performance data provided by Orowealth and Fund expert. Historical data on Net Asset Value, returns and risk metrics were drawn out to calculate risk adjusted performance measures such as NAV and returns for 1st year, 3rd year and 5th year, Sharpe ratio, Treynor ratio, Beta. Statistical and financial approach such as correlation is utilized to evaluate the performance of selected schemes.

SELECTED SAMPLE FOR THE STUDY

Orowealth:

Oro wealth offer a direct mutual fund platform and comprehensive wealth advisory solution with zero commission. ORO advisory offers a tailored investment plan and portfolio rebalancing services. It was found in the year 2015

with the funding amounted to \$2.38M. The mutual fund selected for the study are:

1. ICICI PRUDENTIAL NIFTY NEXT 50 INDEX FUND - DIRECT FUND
2. MOTILAL OSWAL FLEXICAP - DIRECT PLAN-GROWTH OPTION
3. TATA EQUITY P/E FUND - DIRECT PLAN GROWTH OPTION
4. KOTAK EMERGING EQUITY SCHEME
5. AXIS MID CAP – DIRECT PLAN – GROWTH

PIGGY:

Piggy is a mobile application providing mutual fund investment platform. It offers commission-free direct plans of mutual fund. It was founded in the year 2016 with the funding amounted to \$162K. The mutual fund selected for the study are:

1. ICICI PRUDENTIAL BLUE CHIP FUND - DIRECT PLAN
2. KOTAK FLEXICAP FUND - DIRECT PLAN
3. MIRAE ASSET LARGE CAP FUND - DIRECT PLAN
4. INVESCO INDIA CONTRA FUND – DIRECT PLAN
5. HDFC SMALL CAP FUND - DIRECT PLAN

STATEMENT OF THE PROBLEM

Mutual fund investment in Robo advisory is in nascent stage among Indian investor over the last few years. The start-up of Robo advisory in India present both opportunities and challenges in mutual fund industry. In spite of its growing there is limited awareness and understanding of their effectiveness in managing risk and influencing traditional investor compared to traditional advisory services. This study focuses on addressing the gap how the mutual fund is effectively managed and its potential transformation in investment practices in the Indian market.

DATA ANALYSIS

Hypothesis:

H₀: There is a significant relationship between Net Asset Value (NAV) and returns for 1st year, 3rd year and 5th year.

H₁: There is no significant relationship between Net Asset Value (NAV) and returns for 1st year, 3rd year and 5th year.

Table 1 Correlation Between Net Asset Value And Returns

Pearson Correlation Coefficients, N = 10 Prob > r under H0: Rho=0				
	Net Asset Value	1 st year return	3 rd year return	5 th year return
Net_Asset_Value Net Asset Value	1.00000	-0.00473 0.9896	-0.19963 0.5803	0.29778 0.4034
Returns_1_year Returns_1_year	-0.00473 0.9896	1.00000	-0.35394 0.3157	0.12776 0.7251
Returns_3_year Returns_3_year	-0.19963 0.5803	-0.35394 0.3157	1.00000	-0.35099 0.3200
Returns_5_year Returns_5_year	0.29778 0.4034	0.12776 0.7251	-0.35099 0.3200	1.00000

INTERPRETATION:

The above table explains the relationship between the Net Asset Value and returns for 1st year, 3rd year and 5th year. From the analysis it is interpreted that P value for the above-mentioned returns are greater than 0.05 significant level, hence it is concluded that there is no significant relationship between Net asset value and returns of the fund selected for the study. Therefore, we are accepting alternative hypothesis (H_1).

HYPOTHESIS

H_0 : There is a significant relationship between Sharpe ratio, Treynor ratio and beta

H_1 : There is no significant relationship between Sharpe ratio, Treynor ratio and beta

Table 2 Correlation Between Sharpe Ratio, Treynor Ratio And Beta

Pearson Correlation Coefficients, N = 10 Prob > r under H0: Rho=0			
	SHARPE_RATIO	TREYNOR_RATIO	BETA
SHARPE_RATIO SHARPE_RATIO	1.00000	0.73371 0.0157	-0.11505 0.7516
TREYNOR_RATIO TREYNOR_RATIO	0.73371 0.0157	1.00000	-0.49164 0.1490
BETA BETA	-0.11505 0.7516	-0.49164 0.1490	1.00000

INTERPRETATION:

From the above, table explains the relationship between Sharpe ratio, Treynor ratio and Beta. The analysis depicts the strongly positive correlation between Sharpe ratio, Treynor ratio at significant level of (0.0157). On the other hand, the relationship between Sharpe ratio and Beta is negatively correlated at significant level (-0.12), further more comparing the relationship between Treynor ratio and Beta also show the same negative correlation at the level of significant (-0.49) which is insignificant. The overall finding says that from the above three risk performance metrics shows that there is strong relationship between Sharpe ratio and Treynor ratio only, suggesting that funds with higher risk adjusted return tend to have uniform performance metrics.

IMPLICATIONS

- **Limited predictive power of NAV on returns overtime:** The feeble relationship between Net Asset Value (NAV) and returns across different time period i.e. 1st, 3rd and 5th year recommend that NAV alone is not a robust forecasting element of mutual fund performance. The investor should look at additional factors such as market conditions, asset allocation strategies and management expertise when using AI advisors to assess or recommend mutual fund investment.
- **Strong risk adjusted metrics as better indicator:** The strong positive correlation between Sharpe and Treynor ratio (0.73371) indicate that these risk-adjusted performance metrics are strongly aligned in evaluating mutual fund performance. While coming to AI Robo advisors this implies that they should look into these ratios which could be useful in developing more reliable investment strategies.
- **Significant of long-term return consistency:** The weak correlation between returns in different years allure that mutual fund return exhibits a substantial volatility and inconsistency over time. This showcase that investor should be very careful when depending on short-term performance for long-term decision. The AI based advisors can assist the investors in addressing this by utilizing advanced machine learning models to examine historical trends over long period by giving more stable long tem perspective on potential mutual fund performance.

SUGGESTIONS:

- **Increasing Regulatory framework:** The regulatory bodies and policy makers like SEBI must generate a defined protocols and structure to guarantee the investor a safe and efficient workings of these robot advisors.
- **Encourage investor education and awareness:** There should be a focused efforts to foster the Indian investor about the pros and cons that are associated with AI advisors. Seminars / workshops should be conducted to simplify the explanation of how these system works in the investment process.
- **Harness AI for personalized investment solutions:** Robo-advisors in India can be promoted to further boost their customized capabilities of using machine intelligent, offering a specialized investment strategies that synchronize with person's financial goals and time frame for investment.
- **Cost reduction and accessibility:** AI based advisors should constantly pay attention on offering budget friendly investment solutions by lowering management fees and low-cost mutual fund options. This is very specific to India, where cost sensitivity is high among the small investors. Making these advisors accessible through mobile application which helps investors to democratize investment access.

CONCLUSION

Robo Advisors have started as turbulent force in the Mutual fund industry due to their skill to provide tailored investment solutions at scale. These platforms use complex algorithm to assess risk, optimize asset allocation and carry out trade based on investors profile, market trends and historical data. Though Robo advisory are gaining popularity nowadays, their role in India's mutual fund industry still in its beginning stage and raises important question about their effectiveness in managing risk, maximizing returns and their effect on investor behavior. This research analysis focuses to explore the role of Robo advisors in Indian mutual fund on focusing their advantages, challenges and risk its potential to change investment practices. Future research can be focused on comparing long-term performance and investor behavior pattern to further demonstrate the impact of AI- driven advisory services on Indian mutual fund industry.

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