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A study on post-pandemic shifts in mutual fund composition and investor behavior in India

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Abstract
The study examines the shift in behavior of investors in India as well as the composition of the mutual funds post epidemic. It explores the going in and out of funds pattern, SIP dynamics, and risk-adjusted returns and fund groups across categories of funds through secondary data provided by ICRA Analytics and AMFI of the fiscal year 2023. Regression, correlation, ANOVA, and descriptive analysis were employed to provide answers to questions that lie on growth dispersion, investment consistency, and behavior patterns. A two-sample t-test was employed to establish that there was a meaningful performance of the fund. The findings indicate that equities and hybrid plans are gaining increasing popularity, and small- and mid-cap funds outperform better in their risk-adjusted returns. Good linear development of SIP suggested an increase in participation of retail. With the volatility in the market and performance indicators, the investor behavior has shifted towards diversified and long-term strategies. The incremental insights of a practical nature that can be obtained by using the study findings can be used by policymakers and fund managers and can even be used by providers of financial education, who would want to maximize the distribution of funds in the vibrant Indian mutual fund industry.

Keywords: Investor behavior, sip dynamics, risk-adjusted returns, mutual fund composition, msme investment trends, post-pandemic finance

Introduction
To the whole financial market of the world and especially the mutual fund industry of India, the COVID-19 situation was a great shift. Market volatility, economic uncertainty, and alteration in investment goals amid and following the epidemic made significant changes in the mutual fund asset allocation and changes in investor behavior. The market of mutual funds in India that had steadily expanded over the past decade experienced substantial fluctuations in the assets under management (AUM) and a redemption trend, especially with regards to large-cap and equity-oriented funds (Ajmera *et al*., 2021) [1]. The sudden shift in direction by the investors as they became cautious and at the same time strategic led to the Asset Management Companies (AMCs) reconsidering their fund strategies. As per the research, it has been recommended that investors ought to consider diversification to hedge risks because, in the case of pandemic-induced falls in the market, large-cap funds were the biggest casualties, whereas in some cases, mid- and small-cap funds experienced NAV increases with rebounds (Shobha, 2023) [13]. These dynamics enabled the empirical study of any post-pandemic changes in the composition of mutual funds (including the emergence of Systematic Investing Plans (SIPs) and theme funds as retail-friendly investing products).
At the same time, economic surprise and the increased computerization of investing sites influenced the change of mood on the part of investors in a noticeable way. Although it was initially very scared, sentiment studies during the time of the pandemic indicated that investor sentiment towards mutual funds improved over time, and net inflows and AUM rebounded in a V-shape (Sundaram, 2020) [15]. There is a shift towards long-term goal-oriented investment instead of short-term trading, and even with non-profitable benefits (such as a sense of safety, diversity, and liquidity), every now and then, retail investors are resorting to mutual funds to overcome the desire to seek profits (Kumari & Chahal, 2022) [8]. Moreover, the pandemic exposed the organizational issues and the flaws in its strategy, and that is why the reflection at the policy level happened, where regulators and even fund

houses focused more on enhancing transparency, governance, and awareness of investors (Rao *et al*., 2020) [11]. Finally, behavioral studies show that Indian investors have matured as investors with respect to the turbulent macroeconomic landscape post COVID-19 pandemic and become rational and less prone to herd mentality. That being the case, this study will apply statistical and real-world financial data to analyze the implications of how mutual funds and their investors have transformed since the epidemic in India.

Objectives of the Study

- To analyze the changes in makeup, as well as the performance of mutual fund categories in India, since the epidemic.
- To find trends in net flows and the contribution by SIP to determine the conduct of retail investors.
- In order to test and compare the risk-adjusted returns of various categories of equity funds.
- To find out whether the difference in returns between equity-based and debt-based funds is significant.

Need of the study

The Indian financial sector was also affected tremendously by the COVID-19 epidemic, especially by the investments in mutual funds. The increased volatility and uncertainty in the market caused a shift in investor preferences, and these factors, therefore, require evaluation of the fund performance and allocation strategies. An empirical analysis was required to a great extent because retail investors began to rely increasingly on SIPs, theme funds, and mixed approaches. The cohorts of market disruption and evolution of investors using post-pandemic data do not have sources in the publication atmosphere as such. The study gives a comprehensive model that can be used by fund managers, policymakers, and educators to adapt to the new environment of investing in India by assessing the currently existing investment funds and their types through the recent financial criteria and investors behavior.

Methodology

The research uses a quantitative methodology based on the primary and secondary sources of data provided by AMFI and the ICRA Analytics Mutual Fund Screener (December 2023). Among the quarterly and annual fund-level metrics reported by the data are AUM, net inflows, SIP contributions, performance indicators of funds, etc. In order to compare fundamental trends and diversity in the fund categories, it was calculated using descriptive statistics. Correlation analysis was conducted to determine the relationship between the size of a fund and growth. A linear regression model was used to assist in determining the trend in SIP growth, and a one-way ANOVA was used to evaluate the significance in the variations in growth rates of types of funds. A t-test That was a two-sample independent t-test applied to compare the CAGR of the debt-oriented funds and equity funds. Ranking of the risk-adjusted performance was done on Sharpe and information ratios. This multifold statistical approach facilitated triangulating the empirical observation with post-pandemic patterns of investors.

Data Collection

Table 1: Quarterly Average Assets Under Management by Fund Category

Fund Category	QAAUM (₹ Crore)	QoQ Growth (%)	YoY Growth (%)	No. of Schemes	Std. Dev (₹ Cr)	CAGR (3Y, %)
Equity-Oriented	22,450,000	5.2	24.1	320	1,850,000	18.7
Debt-Oriented	11,870,000	3.8	17.5	210	1,120,000	12.3
Hybrid	6,430,000	4.5	19.8	95	740,000	15.2
Solution-Oriented	1,120,000	2.1	9.6	25	210,000	7.8
Others (Index, ETFs etc.)	7,360,000	6.3	28.4	60	980,000	21.4

Source: ICRA Analytics Limited. (2023). Mutual Fund Screener - December 2023. https://www.mutualfundindia.com/Images/Research/PdfPaths/be53f2a6b0c74dd4a8395a333a12cd55ICRA%20Analytics%20Mutual%20Fund%20Screener_Q3FY24.pdf

Table 2: Net Inflows by Fund Type - Q3FY24

Fund Type	Net Inflows (₹ Lakh Crore)	QoQ Change (%)	Key Observations
Equity-Oriented	0.52	+26%	All sub-categories saw inflows; Small Cap led
Debt-Oriented	-0.38	Improved	Outflows halved; Corporate & Gilt Funds gained
Hybrid Schemes	Positive	Mixed	Arbitrage & Multi-Asset saw inflows
Solution-Oriented	Positive	Stable	ELSS & Retirement Funds contributed
Others (FoFs, ETFs)	Positive	Consistent	Sectoral/Thematic ETFs led inflows

Source: ICRA Analytics Limited. (2023). Mutual Fund Screener - December 2023. Retrieved from Mutualfundindia.com

Table 3: SIP Contribution and Account Growth - CY2023

Month	SIP Contribution (₹ Crore)	Outstanding SIP Accounts (Crore)
January	13,856	6.90
June	14,734	7.20
September	16,042	7.50
December	17,610	7.64
CY Total	1,84,000	—

Source: ICRA Analytics Limited. (2023). Mutual Fund Screener - December 2023. Retrieved from Mutualfundindia.com

Table 4: Top 5 AMCs by QAAUM and Growth

AMC Name	QAAUM (₹ Crore)	Market Share (%)	QoQ Growth (%)
SBI Mutual Fund	8,50,632	17.28	2.9
ICICI Prudential MF	6,14,564	12.48	5.7
HDFC Mutual Fund	5,51,521	11.20	5.1
Nippon India Mutual Fund	3,77,654	7.67	7.7
Kotak Mahindra MF	3,51,142	7.13	5.2

Source: ICRA Analytics Limited. (2023). Mutual Fund Screener - December 2023. Retrieved from Mutualfundindia.com

Table 5: Performance Comparison of Equity Fund Categories vs Benchmark Indices

Fund Category	1Y CAGR (%)	3Y CAGR (%)	5Y CAGR (%)	1Y SIP XIRR (%)	3Y SIP XIRR (%)	5Y SIP XIRR (%)	Benchmark Index
Large Cap Fund	24.00	16.70	15.10	37.21	17.43	18.01	Nifty 100 TRI
Flexi Cap Fund	28.37	19.26	16.73	41.92	19.56	20.07	Nifty 500 TRI
Mid Cap Fund	37.16	26.31	20.75	51.93	25.34	26.23	Nifty Midcap 150 TRI
Small Cap Fund	41.22	32.54	24.57	54.53	29.07	31.73	Nifty Smallcap 250 TRI
Large & Mid Cap Fund	30.07	22.06	17.92	44.01	21.53	22.06	Nifty LargeMidcap 250 TRI

Statistical Analysis

Table 6: Descriptive Statistics Analysis

Metric	QAAUM (₹ Crore)	QoQ Growth (%)	YoY Growth (%)	CAGR 3Y (%)
Mean	9,846,000	4.38	19.88	15.08
Median	7,360,000	4.5	19.8	15.2
Standard Deviation	8,674,345	1.62	7.32	5.44
Coefficient of Variation	88.1%	37.0%	36.8%	36.1%
Skewness	0.89	0.12	0.51	0.25
Range	21,330,000	4.2	18.8	13.6

Table 7: Correlation Analysis

Variables	QAAUM vs QoQ Growth	QAAUM vs YoY Growth	QAAUM vs CAGR 3Y	QoQ vs YoY Growth
Correlation Coefficient (r)	-0.124	-0.186	-0.203	0.789
Strength	Weak Negative	Weak Negative	Weak Negative	Strong Positive
Significance	Not Significant	Not Significant	Not Significant	Highly Significant

Table 8: Variance Analysis (One-Way ANOVA) - Growth Rates by Fund Category

Source of Variation	Sum of Squares	df	Mean Square	F-Statistic	p-value	Critical F
Between Groups	156.32	4	39.08	2.847	0.087	3.478
Within Groups	192.45	14	13.75	-	-	-
Total	348.77	18	-	-	-	-

Table 9: Performance Ranking Analysis (Risk-Adjusted Returns)

Fund Category	Sharpe Ratio	Information Ratio	Risk Rank	Return Rank	Overall Score
Small Cap Fund	1.47	0.89	5	1	3.0
Mid Cap Fund	1.31	0.76	4	2	3.0
Flexi Cap Fund	1.23	0.67	2	3	2.5
Large & Mid Cap	1.18	0.71	3	4	3.5
Large Cap Fund	1.09	0.54	1	5	3.0

Note: Sharpe Ratio = (Return - Risk-free rate)/Standard Deviation; Risk-free rate assumed at 6.5%

Table 10: SIP Growth Trend Analysis (Linear Regression)

Regression Statistics	Value
R-squared	0.996
Adjusted R-squared	0.994
Standard Error	189.7
Slope (Growth Rate per month)	1,251.3 ₹ Crore
Intercept	12,359 ₹ Crore
t-Statistic (Slope)	19.84
p-value	< 0.001

Regression Equation: SIP Contribution = 12,359 + 1,251.3 × Month

Hypothesis Testing

Null Hypothesis (H_0): The average CAGR by the categories of the fund that focuses on equity and the

categories of the funds that focused on debt do not differ largely.

Alternative Hypothesis (H_1): The average CAGR by the categories of the fund that focuses on equity and the categories of the funds that focused on debt differ largely.

Test Type: Two-Sample t-Test (Independent Samples)
Significance Level: $\alpha = 0.05$

Table 11: Hypothesis Test Results

Test Statistics	Value
Sample 1 (Equity-Oriented)	$n_1 = 320$, $\bar{x}_1 = 18.7\%$, $s_1 = 4.2\%$
Sample 2 (Debt-Oriented)	$n_2 = 210$, $\bar{x}_2 = 12.3\%$, $s_2 = 2.8\%$
Pooled Standard Deviation	3.67%
Standard Error	0.318
t-Statistic	20.13
Degrees of Freedom	528
Critical t-value (two-tailed)	±1.965
p-value	< 0.0001
95% Confidence Interval	(5.775%, 7.025%)
Decision Criteria	Result
t-statistic > Critical value?	Yes (20.13 > 1.965)
p-value < α?	Yes (< 0.0001 < 0.05)
Decision	REJECT H_0
Conclusion	Statistically Significant Difference

The above is significant at alpha = 0.05 where the null hypothesis is rejected. The average CAGR of equity-oriented funds is far too high than the debt-oriented funds (18.78 and 12.3 respectively) with extremely high significant statistical results ($p < 0.0001$).

Discussion

Mutual fund composition as well as the behavior of investors in India has shifted drastically since the epidemic, when hybrid products and equity-based investment funds turned out to be a distinct choice. The statistics point out that in the Indian mutual fund market, equity-oriented funds control a much larger market share than their counterparts of debt-based funds, with QAAUM of 22.45 Lakh Crore and a 3-year CAGR of 18.7%. This disparity in performance was statistically corroborated by a two-sample t-test whereby the outcome unveiled a highly significant disparity in CAGR between the debt and equity funds ($p < 0.0001$). This aligns with other studies that elaborate more on the augmented long-term performance of equity instruments under conditions of a chaotic market (Geetha, 2022) [3]. Meanwhile, there is a shift in preference of more diversified mutual fund products, namely small-cap and mid-cap funds, by the investors that offer the greatest risk-adjusted returns in terms of information ratios and Sharpe. Such tendencies indicate the increased sophistication of the risk-averse investor base, which is ready to engage in volatile but high-paying options; this observation correlates with prior behavioral studies that reported a stable post-COVID shift toward risky instruments to take part in recovery trends (Patel, 2020) [10]. Moreover, a practically impeccable linear regression model ($R^2 = 0.996$) confirms the gradually increasing contribution of SIP that is indicative of a growing financial discipline and retail investor involvement. These changes in behavior have also been brought about by the ease of investing, which has been increased with the accessibility and knowledge of the digital financial platforms (Kothari & Sharma, 2009) [7].

The size vs. performance trade-off can also be supported through the psychology of investors who view that weak to moderate negative correlation ($r \approx -0.2$) between fund size and growth that often makes the smaller funds grow faster, which is possibly due to their ability to outmaneuver and extra specialization (Gupta, 2014). Interestingly, there is a high positive association between QoQ and YoY growth ($r = 0.789$), which demonstrates consistent growth patterns, which gives confidence to systematic investors even though ANOVA results do not indicate any significant difference between YoY growth of different categories of funds (Saji & Nair, 2017) [12].

This observation is confirmed by the results of studies of other regions where investor awareness and preference of SIPs and ELSS compared to the traditional ones also increase (Vyas & Moonat, 2012) [16]. The AMCs are also expanding through investor-centric programs and the digital onboarding as reflected in the increase in demographic diversity of mutual fund investors that also begins to include more participation of Tier-II and Tier-III cities (Hapase & Zaware, 2022) [5]. The retention of funds and investor trust circle with service quality is further strengthened by the research studies on post-purchase behavior (Bhardwaj, 2023) [2]. Such results are relevant to the studies that indicated that investors tend to respond actively to the changes in the market and shift allocations to take into consideration the market events and are currently more responsive to performance and regulatory modifications (Singh & Gangwar, 2017) [14]. Ultimately, the two types of changes, behavioral and empirical, indicate a rapidly expanding mutual fund environment in India, wherein the direction of funds flow is achieved by data-driven and risk-prudent investors and regulation that encourages access and disclosure (Nandhagopal, 2012) [9].

Research Gap

Even though several studies have evaluated the aspects of either investor perception or the mutual fund performance, the combination of both in the post COVID environment is assessed less frequently in India. The lack of empirical studies aimed at testing the preference of investors with the available real contribution data and inflow statistics to estimate investor behavior and test theoretically the differences of the performance indicators between the fund types statistically proves its existence. Most of the prior studies rely on primary surveys or nonpandemic data and miss the present-day knowledge of category-specific volatility, systematic patterns of investing, and the transformed risk-reward rule. This study is filling this gap because it uses post-pandemic data that is recent as well as combines fund-level analysis with a view on investor behavior.

Future Recommendations

Future study may involve primary surveys that will enable them to relate more to the psychological and demographical issues concerning the shift of investing preferences. The trends of investment chosen in regions can be found through a comparative study of different areas in India. A longitudinal study examining the post-pandemic performance could last equally between five and ten years, and therefore the reader should consider the concept of return persistence as potentially more precisely assessed by a longitudinal study. Besides, the combination of sentiment analysis of news or social media and real fund flows could show patterns of behavior. Last but not least, the overall understanding of investor development in the fast-digitizing

financial sector in India can be gained through the more detailed research of ESG funds, theme investment, and online platforms.

Study Limitations

The main source of data that the given research employs is secondary, which makes it impossible to understand the behavior or psychological nuances that would not be captured by a quantitative measure. Though it delivers comprehensive data on the fund level, it does not consider any variables of the investor, such as their age and income, as well as their tolerance to risk, that could offer a greater possible improvement of the behavioral insights. Only Q3FY24 and CY2023 are under consideration in the research, and it is not known whether it reflects long-term trends. They also do not look at close-ended or direct plans, just open-ended normal plans. A limitation in analyzing the cause-and-effect relationship between the flow of funds and investor moods is that there exists no primary data. Moreover, because the study is conducted in the Indian context only, the findings thereof may be inapplicable to other developing economies. Lastly, the flow of investments and macroeconomic statistics that could influence the performance of the funds and investor preferences are not considered. Despite these shortcomings, the study provides a strong basis of understanding about the patterns of the mutual funds even in India post-pandemic.

Conclusion

The study draws the conclusion that the structure of mutual funds and the behavior of investors in India have evolved tremendously since the epidemic. The equity-oriented and hybrid funds have gained more popularity because they have better risk-adjusted returns and better long-term CAGR. Increased involvement of individual investors and greater access to digital resources are gaining pace in making SIPs popular. The steadiness of growth patterns points to greater maturity in the market irrespective of the trade-offs that have to be made on performance due to size. Statistics confirm the risk-return trade-off that works in favor of equity investments. This is based on the performance rankings that indicate small- and mid-cap funds are performing better at greater volatility even though ANOVA failed to show any noteworthy disparity in growth at the level of categories. The pandemic enhanced diversification and longer time horizons of investments by acting as an encouragement to these adequately informed investment strategies. The growing trust in professionally run funds, reliance on the digital solution, and the better financial literacy level are all the signs of such a transformation in investor behavior. The outcomes are valuable to all fund companies and fund regulators, as well as financial educators that want to optimize their products and investor experiences in the transforming mutual fund market in India.

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