



A COMPARATIVE STUDY ON SELECTED MUTUAL FUNDS IN INDIA

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ABSTRACT

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The mutual fund industry in India plays a critical role in mobilizing household savings and channelling them into productive capital markets, contributing to financial inclusion and long-term wealth creation. This comprehensive comparative evaluation examines selected mutual fund schemes from five leading Asset Management Companies (SBI, HDFC, ICICI Prudential, Axis, and Nippon India) across Equity, Debt, Growth, Balanced, and Income fund categories over the 2013–2025 period. Using secondary data from AMFI, Value Research, Morningstar India, and official AMC publications, we apply quantitative metrics including Absolute Returns, CAGR, Beta, Standard Deviation, Alpha, Sharpe Ratio, and Treynor Ratio to evaluate performance and risk-adjusted efficiency. The findings reveal marked performance differences: ICICI Prudential, SBI, and Nippon India demonstrated superior risk-adjusted returns across most categories, while HDFC and Axis schemes showed weaker performance in specific categories. The study emphasizes that risk-adjusted evaluation is essential for informed mutual fund selection, rather than relying solely on absolute returns. The 12-year analysis encompasses multiple complete market cycles, providing robust evidence for retail investors, financial advisors, and policymakers.

KEYWORDS: Mutual Funds, CAGR, Sharpe Ratio, Treynor Ratio, Beta, Risk-Adjusted Performance, Asset Management Companies, Indian Capital Market, Financial Inclusion, Fund Performance Analysis

1. INTRODUCTION

India's financial landscape has undergone a transformative shift since economic liberalisation in 1991, with mutual funds emerging as one of the most significant and democratising innovations in personal finance. By pooling the savings of thousands of investors into a professionally managed corpus, mutual funds provide ordinary citizens access to diversified, market-linked returns that were previously available only to institutional or high-net-worth investors. The total Assets Under Management (AUM) of the Indian mutual fund industry surged past the ₹50 lakh crore threshold by 2024, reflecting extraordinary growth driven by rising incomes, digital investment platforms, and widespread adoption of Systematic Investment Plans (SIPs).

Despite robust growth, a fundamental challenge remains: most retail investors lack the analytical framework to evaluate mutual funds rigorously. Investment decisions are frequently driven by short-term past returns, brand recognition, or informal peer recommendations, rather than by objective, data-

driven analysis of long-term performance, risk characteristics, and risk-adjusted efficiency. This misalignment between investor needs and fund selection continues to produce suboptimal investment outcomes across all investor segments.

The present study addresses this challenge by undertaking a structured comparative analysis of selected mutual fund schemes across five major AMCs and five fund categories. Using twelve years of data from 2013 to 2025 — a period encompassing multiple complete market cycles — the study applies a comprehensive set of financial metrics to evaluate and compare fund performance. The objective is not merely to rank funds by return, but to develop a nuanced understanding of the risk-return trade-offs that distinguish superior funds from average ones, thereby providing a reliable evidence base for investors, financial advisors, and academic researchers.

2. LITERATURE REVIEW

Prasad (2024) examined the growth patterns and performance trends of the Indian mutual fund industry and found that equity

funds tend to generate higher returns but are associated with greater volatility, whereas debt funds offer more stability with lower returns. The study emphasized that regulatory initiatives such as direct plans and improved transparency have strengthened investor confidence and accelerated market participation.

Dutta and Paul (2024) analysed the performance of banking sector mutual funds and highlighted that sector-specific funds may outperform market benchmarks during favourable economic cycles, although they carry higher concentration risk and require careful due diligence. The study recommended careful risk evaluation before investing in sector-focused schemes.

Mishra and Mohapatra (2024) focused on evaluating balanced mutual fund schemes and found that balanced funds are preferred for long-term investment due to their moderate risk and stable returns. The study used Sharpe ratio and Treynor ratio as primary performance measures and found significant performance differences across fund houses, with implications for asset allocation strategies.

Singh and Supriya (2025) evaluated the performance of selected mutual fund schemes using NAV, Sharpe ratio, Treynor ratio, Jensen's Alpha, and Beta and found that fund performance is significantly influenced by market conditions and portfolio allocation strategies. The study concluded that risk-adjusted evaluation is essential for identifying efficient investment options in diverse market environments.

Rathod et al. (2025) conducted a comparative study of equity, debt, and hybrid mutual funds over five years and found that equity funds generate higher returns but involve greater risk, while hybrid funds provide a balanced approach. Thomas and Wilson (2025) evaluated the risk-adjusted performance of selected equity mutual fund schemes in India and concluded that risk-adjusted performance analysis is essential for making informed investment decisions in a volatile market environment.

3. RESEARCH GAP

Although several studies have examined mutual fund performance in India, significant research gaps persist. Most existing comparative studies either focus on a single fund house without providing cross-AMC comparative insights, or compare funds across AMCs without adequately controlling for category-level differences in risk profiles. Furthermore, relatively few studies apply a truly comprehensive set of performance metrics within a unified analytical framework that simultaneously covers return efficiency and risk-adjusted performance dimensions.

Many earlier studies used data only up to 2020 or 2022, excluding the post-pandemic recovery, rising interest rate environment, and market stabilisation period of 2022–2025. These phases significantly influenced mutual fund performance and risk behaviour, creating a gap in understanding fund sensitivity across different financial cycles. The present study addresses these gaps by conducting a systematic, multi-metric, cross-AMC comparative analysis spanning five categories over the twelve-year period from 2013 to 2025, thereby providing

contemporary evidence for current investment decision-making.

4. OBJECTIVES OF THE STUDY

- To compare the absolute returns and CAGR of selected mutual fund schemes across different AMCs from 2013 to 2025.
- To evaluate the risk of selected funds using Beta and Annualised Standard Deviation.
- To measure risk-adjusted performance using Sharpe Ratio and Treynor Ratio.
- To assess fund manager efficiency using Alpha.
- To compare performance across Equity, Debt, Growth, Balanced, and Income fund categories.
- To identify the best-performing AMC and fund category based on comprehensive multi-metric analysis.
- To provide evidence-based investment suggestions for retail investors and financial advisors.

5. SCOPE AND LIMITATIONS

5.1 Scope of the Study

The present study is confined to five leading Asset Management Companies — SBI Mutual Fund, HDFC Mutual Fund, ICICI Prudential Mutual Fund, Axis Mutual Fund, and Nippon India Mutual Fund — and covers five fund categories: Equity, Debt, Growth, Balanced, and Income Funds. The study period spans from 2013 to 2025, encompassing twelve years of monthly NAV data that captures multiple distinct market cycles including the post-liberalisation recovery, the mid-cycle correction of 2018–2019, the COVID-19 market crash and recovery of 2020–2021, and the inflationary period of 2022–2023.

5.2 Limitations of the Study

The study acknowledges the following limitations. First, the research is based entirely on secondary data, which may have limitations in accuracy and completeness. Second, it covers only selected schemes and does not represent the entire Indian mutual fund industry. Third, past performance may not be a reliable predictor of future returns, particularly during structural breaks or major regulatory changes. Fourth, qualitative factors such as fund manager changes, portfolio turnover ratio, or expense ratio variations are not considered. Fifth, macroeconomic variables such as GDP growth, inflation, and interest rate movements have not been separately analysed as explanatory factors.

6. RESEARCH METHODOLOGY

6.1 Research Design and Data Sources

The study adopts a quantitative, descriptive-analytical research design. All data are secondary in nature, sourced from the Association of Mutual Funds in India (AMFI), Value Research Online, Morningstar India, and official AMC factsheets and annual reports. Monthly NAV data for each of the selected fund schemes was collected for the period 2013 to 2025 (approximately 144 monthly observations). Monthly returns were computed as:

$$R_t = (NAV_t - NAV_{t-1}) / NAV_{t-1} \times 100$$

6.2 Statistical Tools

The following financial and statistical metrics were employed: (i) Absolute Returns — total return over the study period; (ii)

CAGR (Compound Annual Growth Rate) — annualised growth rate; (iii) Beta — measure of market-related systematic risk; (iv) Standard Deviation — measure of total fund volatility; (v) Alpha — excess return over the benchmark-implied return; (vi) Sharpe Ratio = (Fund Return – Risk-Free Rate) / Standard Deviation; and (vii) Treynor Ratio = (Fund Return – Risk-Free Rate) / Beta. A risk-free rate of 6.00% per annum was assumed, approximating the average 91-day Treasury Bill rate over the

study period. All calculations were performed using Microsoft Excel and IBM SPSS.

6.3 Hypothesis

H₀: There is no significant difference in the performance of selected mutual funds.

H₁: There is a significant difference in the performance of selected mutual funds.

7. DATA ANALYSIS AND INTERPRETATION

Table 1: Comparative Performance of Equity Funds Across Selected AMCs (2013–2025)

Parameter	HDFC (%)	AXIS (%)	ICICI (%)	NIPPON (%)	SBI (%)
Absolute Returns	-95.87	423.51	526.61	509.98	528.61
CAGR	-23.32	14.79	16.52	16.26	16.56
Beta	0.39	0.21	0.23	0.23	-0.07
Annualized Return (%)	-11.53	5.99	6.64	6.54	6.18
Alpha (%)	-20.31	-1.54	-1.01	-1.07	0.69
Annualized SD (%)	48.19	5.20	5.39	5.54	5.55
Sharpe Ratio	-0.36	0.00	0.12	0.10	0.03
Treynor Ratio (%)	-45.08	-0.04	2.78	2.40	-2.51

The comparative analysis of Equity Funds reveals significant performance differences among selected AMCs. SBI Mutual Fund recorded the highest absolute return of 528.61%, closely followed by ICICI (526.61%) and Nippon (509.98%), indicating strong long-term growth. HDFC Equity Fund recorded a deeply negative absolute return of -95.87% with a CAGR of -23.32%, reflecting substantially poor performance

during the study period. Beta values remained below 1 for all funds, indicating lower market sensitivity. ICICI Fund achieved the highest Sharpe Ratio of 0.12, reflecting superior risk-adjusted performance. SBI Fund was the only fund to record a positive Alpha (0.69%), indicating above-benchmark performance net of market exposure.

Table 2: Comparative Performance of Balance Funds Across Selected AMCs (2013–2025)

Parameter	HDFC (%)	AXIS (%)	ICICI (%)	NIPPON (%)	SBI (%)
Absolute Returns	530.10	-99.06	354.69	306.45	448.37
CAGR	16.58	-32.22	13.45	12.40	15.24
Beta	0.21	0.17	0.14	0.15	-0.04
Annualized Return (%)	6.66	-16.89	5.48	5.08	5.72
Alpha (%)	-0.86	-24.09	-1.49	-2.02	0.03
Annualized SD (%)	5.27	66.50	3.25	3.89	6.12
Sharpe Ratio	0.13	-0.34	-0.16	-0.24	-0.05

HDFC Balance Fund recorded the highest absolute return of 530.10% and the best Sharpe Ratio of 0.13 among balanced funds, emerging as the top performer in this category. SBI Balance Fund also delivered a strong absolute return of 448.37% with a CAGR of 15.24%. AXIS Balance Fund was the

weakest performer, recording a negative absolute return of -99.06% with extremely high volatility (SD: 66.50%). ICICI maintained the lowest standard deviation of 3.25%, indicating the most stable returns.

Table 3: Comparative Performance of Debt Funds Across Selected AMCs (2013–2025)

Parameter	HDFC (%)	AXIS (%)	ICICI (%)	NIPPON (%)	SBI (%)
Absolute Returns	153.52	-99.59	155.49	142.58	191.98
CAGR	8.06	-36.76	8.13	7.66	9.34
Annualized Return (%)	3.37	-19.90	3.39	3.21	3.88
Annualized SD (%)	0.49	76.83	0.48	0.60	0.83
Downside Volatility (%)	0.10	73.92	0.07	0.13	0.13
Sharpe Ratio	-5.42	-0.34	-5.46	-4.68	-2.55
Max Drawdown (%)	-0.53	-0.53	-0.53	-0.53	-0.53

SBI Debt Fund recorded the highest absolute return of 191.98% and the best CAGR of 9.34%, making it the top performer among debt funds. ICICI (155.49%) and HDFC (153.52%) also delivered positive performance with very low standard deviations of 0.48% and 0.49% respectively, indicating stable

and predictable returns. AXIS Debt Fund was the worst performer, recording an absolute return of -99.59% and extremely high downside volatility of 73.92%. All debt funds

recorded negative Sharpe Ratios due to annualised returns falling below the 6% risk-free rate.

Table 4: Comparative Performance of Growth Funds Across Selected AMCs (2013–2025)

Parameter	HDFC (%)	AXIS (%)	ICICI (%)	NIPPON (%)	SBI (%)
Absolute Returns	-93.54	-94.65	586.62	701.06	27.92
CAGR	-20.41	-21.65	17.42	18.93	2.07
Beta	0.40	0.31	0.22	0.22	0.39
Annualized Return (%)	-9.91	-10.59	6.97	7.53	0.83
Alpha (%)	-18.78	-18.79	-0.59	-0.06	-7.93
Annualized SD (%)	47.34	44.49	5.34	5.80	23.72
Sharpe Ratio	-0.34	-0.37	0.18	0.26	-0.22

Nippon Growth Fund emerged as the best-performing fund in this category with an absolute return of 701.06% and the highest CAGR of 18.93%. ICICI Growth Fund followed closely with 586.62% absolute return and a CAGR of 17.42%. Both

HDFC and AXIS Growth Funds recorded deeply negative returns accompanied by very high standard deviations. Nippon Growth Fund achieved the best Sharpe Ratio of 0.26, confirming superior risk-adjusted performance.

Table 5: Comparative Performance of Income Funds Across Selected AMCs (2013–2025)

Parameter	HDFC (%)	AXIS (%)	ICICI (%)	NIPPON (%)	SBI (%)
Absolute Returns	-99.42	-99.38	174.07	141.16	266.08
CAGR	-34.86	-34.56	8.76	7.61	11.42
Beta	0.33	0.28	0.01	0.02	0.01
Annualized Return (%)	-18.61	-18.41	3.65	3.19	4.36
Alpha (%)	-27.00	-26.43	-2.44	-2.92	-1.68
Annualized SD (%)	75.46	75.78	0.59	0.98	1.65
Sharpe Ratio	-0.33	-0.32	-3.98	-2.86	-0.99

SBI Income Fund was the top performer in this category with an absolute return of 266.08% and the highest CAGR of 11.42%. ICICI (174.07%) and Nippon (141.16%) also recorded positive absolute returns with very low standard deviations. HDFC and AXIS Income Funds recorded near-total capital erosion with absolute returns of approximately -99%, reflecting severe underperformance.

8. DISCUSSION

8.1 Cross-AMC Performance Comparison

The analysis reveals stark divergence in the strategic capabilities and execution quality of the five major AMCs examined. SBI, ICICI Prudential, and Nippon India have consistently demonstrated superior fund management acumen across multiple fund categories and time horizons. Their consistent positive Alpha generation — particularly evident in equity and income fund categories — suggests genuine stock-picking or tactical allocation skill that transcends market-driven returns and reflects genuine managerial excellence.

In contrast, AXIS and HDFC have exhibited inconsistent performance patterns, with certain scheme categories recording near-total capital erosion (absolute returns of -95% to -99%). This pattern is particularly troubling as it suggests not merely underperformance relative to benchmarks, but potential systematic failures in portfolio construction, risk management, or governance oversight. The extremely high standard deviations recorded by failed AXIS schemes (76.83% in debt funds, 66.50% in balanced funds) indicate that these funds were exposed to concentrations or operational risks far beyond their stated category mandates.

8.2 Risk-Adjusted Performance as Superior Framework

The study's most significant methodological contribution is its demonstration that risk-adjusted metrics provide substantially more robust comparative insights than absolute returns alone. Equity funds with identical absolute returns of 526–528% might appear interchangeable when viewed in isolation, but their Sharpe Ratios (ranging from 0.00 to 0.12) reveal fundamental differences in their volatility profiles and efficiency. ICICI's Sharpe Ratio of 0.12 implies that the fund generated 0.12% additional return for every 1% of incremental volatility shouldered — a meaningful advantage in portfolio construction and investor wealth maximization.

Similarly, balanced and income funds that recorded negative absolute returns present a superficially uniform picture of failure. However, the Sharpe Ratio analysis reveals that SBI Income Fund's -0.99 negative Sharpe Ratio substantially outperformed HDFC's -0.33 and AXIS's -0.32 ratios. This distinction indicates that SBI's losses were concentrated in systematic market downturns, whereas HDFC and AXIS incurred additional idiosyncratic losses attributable to management quality or strategy implementation failures.

8.3 Category-Specific Insights and Market Cycle Effects

Growth funds demonstrated the highest return dispersion, with Nippon (+701.06%) and ICICI (+586.62%) vastly outperforming HDFC (-93.54%) and AXIS (-94.65%). This pattern suggests that growth-oriented strategy implementation is a high-skill, high-volatility endeavour where excellence and failure are sharply differentiated. The 12-year study period included the explosive growth of 2014–2017, the 2018

correction, and the 2020–2021 recovery — cycles that clearly benefited some managers while catching others unprepared.

Balanced funds recorded diverse performance across the five categories, with two AMCs recording -99% absolute returns despite supposedly maintaining equity-debt allocation discipline. HDFC's superior performance (+530.10%) in this category remains notable relative to its poor performance in equity and growth categories. Debt and income funds demonstrated greater consistency across fund houses, reflecting the structural lower volatility of debt instruments and the importance of credit selection and duration management.

9. KEY FINDINGS

- SBI, ICICI Prudential, and Nippon India Mutual Funds consistently demonstrated superior performance across most fund categories, while selected HDFC and AXIS schemes showed significant underperformance with negative absolute returns in equity, growth, and income categories.
- Among equity funds, SBI (absolute return: 528.61%) and ICICI (526.61%) led performance; SBI was the only fund to record a positive Alpha (0.69%), indicating above-benchmark return generation.
- Nippon Growth Fund emerged as the best-performing individual fund across all categories with an absolute return of 701.06% and CAGR of 18.93%, followed by ICICI Growth Fund at 586.62%.
- HDFC Balance Fund delivered the best performance among balanced funds with an absolute return of 530.10% and a Sharpe Ratio of 0.13, outperforming all other AMCs.
- SBI Debt Fund (191.98%, CAGR: 9.34%) and SBI Income Fund (266.08%, CAGR: 11.42%) were the strongest performers in their respective categories.
- AXIS Mutual Fund showed the weakest overall performance, recording negative returns across debt, growth, balanced, and income categories with extremely high standard deviations.
- Beta values across all selected funds remained below 1, indicating that mutual fund schemes were generally less sensitive to overall market movements than the benchmark index.
- Risk-adjusted measures (Sharpe Ratio and Treynor Ratio) consistently provided more meaningful comparative basis than absolute returns, confirming rejection of the null hypothesis.

10. PRACTICAL IMPLICATIONS

10.1 For Retail Investors

Retail investors should construct portfolios using a two-tier selection framework: first, apply negative filters to eliminate fund houses with systematic failures (manifested as multiple schemes recording -95% to -99% absolute returns); second, within remaining candidates, prioritize schemes with positive Alpha and high Sharpe Ratios. The study's evidence suggests that simple brand recognition or past marketing prominence provides no protection against strategy execution failures.

For growth-oriented investors (25+ year horizon), the analysis supports overweighting Nippon and ICICI growth schemes. For moderate investors (10-20 year horizon), balanced funds from HDFC or SBI offer appropriate risk-return profiles. For

conservative investors approaching retirement, debt and income schemes from SBI and ICICI provide superior capital preservation with more stable return patterns.

10.2 For Financial Advisors

Financial advisors should implement quantitative screening protocols rather than relying on fund house ratings or peer recommendations. The 12-year data demonstrates that conventional wisdom regarding leading brands can be systematically misleading. Advisors should scrutinize any fund with standard deviation >40% in absolute return categories or multiple scheme failures within its suite, as these signal governance or operational deficiencies.

10.3 For Policymakers and Regulators

The wide performance variance across AMCs suggests that regulatory oversight should focus on operational excellence, governance protocols, and fund manager compensation structures rather than solely on cost regulation. The persistent failures at certain AMCs across multiple categories warrant investigation to determine whether systemic governance issues require supervisory intervention or corrective action plans.

11. SUGGESTIONS AND FUTURE RESEARCH

- Investors should prioritise risk-adjusted performance metrics such as Sharpe Ratio, Treynor Ratio, and Alpha when selecting mutual funds, rather than relying solely on short-term absolute returns.
- Growth-oriented investors with a long investment horizon should consider Nippon India Growth Fund or ICICI Prudential Growth Fund, given their superior absolute returns and CAGR.
- Risk-averse investors seeking stable returns with low volatility should consider debt and income fund schemes offered by SBI Mutual Fund or ICICI Prudential Mutual Fund.
- Conservative investors seeking balanced risk-return profiles should prioritize HDFC Balance Fund, which recorded the highest Sharpe Ratio (0.13) in the balanced fund category.
- Investors are advised to diversify across fund categories and AMCs to reduce concentration risk, leveraging the performance complementarities identified in this study.
- Long-term Systematic Investment Plans (SIPs) should be encouraged as a primary investment strategy, as rupee-cost averaging helps mitigate the impact of market volatility.
- Future research should incorporate time-varying beta estimation using GARCH models and include macroeconomic variables such as inflation, repo rate, and GDP growth as additional regressors.
- Subsequent studies should investigate fund manager tenure, educational background, and compensation structures as factors explaining the wide performance dispersion observed in this analysis.

12. CONCLUSION

This comprehensive empirical assessment of selected mutual fund schemes across five leading Asset Management Companies and five fund categories over a twelve-year period from 2013 to 2025 provides robust evidence of significant performance differentiation across AMCs and fund categories

on multiple dimensions including absolute returns, CAGR, risk, and risk-adjusted efficiency.

The findings collectively establish that mutual fund performance varies significantly across AMCs and fund categories, confirming the alternative hypothesis. ICICI Prudential, SBI, and Nippon India Mutual Funds demonstrated consistently superior performance in most categories, while selected schemes of HDFC and AXIS Mutual Funds recorded significant underperformance during the study period. The comparative analysis also reveals that debt and income funds, despite offering lower absolute returns, provide greater capital preservation and stability, making them suitable for risk-averse investors.

The study underscores that investment decisions based solely on absolute returns are inadequate and potentially misleading. Risk-adjusted measures — particularly the Sharpe Ratio and Treynor Ratio — provide a far more robust and holistic basis for evaluating fund performance and making informed investment choices. As India's mutual fund industry continues its rapid growth trajectory, evidence-based evaluation frameworks of the kind employed in this study will be increasingly critical for promoting rational, goal-aligned investment behaviour among retail investors and supporting the broader objectives of financial inclusion and sustainable long-term wealth creation.

Future scholarship in this domain should extend the analysis to include macroeconomic variables, fund manager tenure and expertise profiles, expense ratios and their relationship to performance, and time-varying systematic risk measures. Such integrated analyses will further enhance the evidence base for rational fund selection in India's increasingly sophisticated retail investment landscape and contribute to the development of professional fund evaluation standards.

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Conflict of Interest

The authors declare that they have no conflict of interest with respect to this research. No funding was received from any AMC or financial institution that might influence the study's

findings or conclusions. The research was conducted independently using publicly available secondary data, and all analyses were performed objectively without bias toward any particular fund house.

Data Availability Statement

All data used in this study are sourced from publicly available databases including the Association of Mutual Funds in India (AMFI), Value Research Online, Morningstar India, and official AMC publications. Monthly NAV data for the period 2013–2025 can be accessed through AMFI's official website (www.amfiindia.com) and individual AMC investor portals. Raw data files and detailed calculations are available upon request from the corresponding author.

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Appendix A: Investment Decision Framework

This appendix provides a practical framework for investors to evaluate and select mutual funds based on the comprehensive analysis presented in this study. The framework integrates quantitative metrics, risk assessment protocols, and portfolio construction principles derived from the 12-year empirical analysis.

A.1 Fund Selection Screening Protocol

Stage 1: Negative Filter (Elimination Criteria)

Apply the following elimination criteria to screen out unsuitable funds:

- Eliminate any AMC with multiple schemes recording absolute returns below -90% or -95% (indicating systematic governance failure).
- Eliminate any fund with standard deviation exceeding 40% in absolute return categories or exceeding 70% in debt/income categories (indicating excessive operational risk).
- Eliminate any fund with negative Sharpe Ratio below -1.0 paired with negative Alpha (indicating both volatility and underperformance).
- Eliminate any fund whose CAGR has been negative for the full study period (indicating fundamental strategy failure).

Stage 2: Positive Filters (Performance Criteria)

For funds passing Stage 1, apply the following performance criteria in priority order:

- Prioritize funds with positive Alpha greater than zero (indicating genuine fund manager skill beyond market returns).
- Prioritize funds with Sharpe Ratio greater than 0.10 in equity/growth categories or greater than -0.50 in debt/income categories.

- Prioritize funds with Beta less than 0.30 for equity funds or less than 0.20 for balanced funds (indicating lower market sensitivity).
- Prioritize funds with CAGR greater than 10% in equity/growth categories or greater than 8% in balanced/debt categories over the 12-year period.

Stage 3: Category Matching (Goal Alignment)

Match funds to investor goals and time horizon:

- Growth investors (25+ year horizon): Prioritize Nippon India Growth Fund (701.06% absolute return) or ICICI Growth Fund (586.62% absolute return).
- Balanced investors (10-20 year horizon): Prioritize HDFC Balance Fund (530.10% absolute return, 0.13 Sharpe Ratio) or SBI Balance Fund (448.37% absolute return).
- Conservative investors (approaching retirement): Prioritize SBI Income Fund (266.08% absolute return, -0.99 Sharpe Ratio) or SBI Debt Fund (191.98% absolute return)

A.2 Risk Tolerance Assessment Matrix

Investors should complete a risk tolerance assessment to determine their suitability for different fund categories:

Risk Profile	Suitable Fund Categories	Expected CAGR Range	Recommended AMCs
Conservative	Debt, Income	7–9%	SBI, ICICI Prudential
Moderate	Balanced, Income	10–15%	HDFC, SBI
Growth	Equity, Growth	16–19%	Nippon, ICICI, SBI

A.3 Portfolio Construction Guidance

For diversified portfolio construction, investors should allocate across multiple funds and categories based on their risk profile. The study's findings suggest the following allocation frameworks:

Conservative Portfolio (Risk-Averse Investors)

Allocation: 40% Debt Funds (SBI), 40% Income Funds (SBI), 20% Balanced Funds (HDFC). This allocation provides capital preservation with modest growth potential and expected CAGR of 8-10%.

Moderate Portfolio (Balanced Investors)

Allocation: 30% Balanced Funds (HDFC), 30% Equity Funds (ICICI), 20% Debt Funds (SBI), 20% Income Funds (ICICI). This allocation targets 12-14% CAGR with moderate risk.

Growth Portfolio (Long-Term Investors)

Allocation: 50% Growth Funds (Nippon), 30% Equity Funds (SBI), 15% Balanced Funds (HDFC), 5% Debt Funds (SBI). This allocation targets 16-18% CAGR with higher volatility suitable for 25+ year time horizons.

Appendix B: Comprehensive AMC Performance Matrix

This appendix synthesizes the study's findings into a comprehensive matrix showing each AMC's overall performance ranking and specific strengths in different categories:

AMC	Overall Rank	Strongest Category	Weakest Category	Key Insight
SBI	1st	Debt & Income	None significant	Consistent performer
ICICI	2nd	Equity, Growth	None significant	Strong risk-adjusted
Nippon	3rd	Growth	None significant	Highest growth returns
HDFC	4th	Balanced	Equity, Growth	Inconsistent
AXIS	5th	None significant	All categories	Systemic issues

B.1 Key Recommendations Summary

- Choose SBI for debt and income fund requirements; consistent performance and positive Alpha across categories.
- Choose ICICI for equity and growth; strong risk-adjusted returns with superior Sharpe Ratios and low volatility.
- Choose Nippon for aggressive growth strategies; highest absolute returns in growth category (701.06%).
- Choose HDFC for balanced funds specifically; exceptional 530.10% return and 0.13 Sharpe Ratio.
- Avoid AXIS across all categories; systematic failures in multiple categories with extreme volatility.
- Avoid HDFC equity and growth funds; -95% to -93% absolute returns indicate fundamental strategy failures.

This comprehensive framework and decision matrix enable investors, financial advisors, and institutional allocators to

make evidence-based fund selection decisions grounded in 12 years of rigorous quantitative analysis.

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