

A Comparative Analysis of the Recent Performance of HDFC Mutual Fund and ICICI Prudential Mutual Fund

¹Dr Devadutta Indoria, ²Dr K Devi,

¹Head P.G Department of Commerce, Vikram Dev University, Jeypore
, Odisha

Email-mailedevdutt@gmail.com

²Head Department of Commerce, D.A.V Autonomous College, Titilagarh, Odisha

E-mail- deviindoria6666@gmail.com *Corresponding Author-

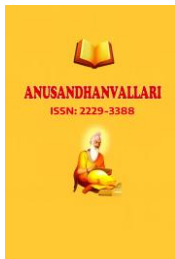
Abstract- This study provides a thorough comparative study of the financial performance of the two leading asset management firms in India, namely HDFC Mutual Fund and ICICI Prudential Mutual Fund, as per the Assets Under Management (AUM) of the two companies. The study is conducted on the flagship large cap equity schemes of HDFC Top 100 Fund and ICICI Prudential Bluechip Fund for a 6 year period from 2017 to 2022. The main research question is: Is there a statistically significant difference between the two fund houses in terms of risk adjusted returns? The empirical basis is secondary data obtained from AMFI, NSE and individual fund factsheet. The annual return data is used in a sample of six fiscal years. The Sharpe ratio, Jensen's alpha, Treynor ratio, beta and standard deviation are used to measure performance. Inferential statistical tools such as independent-sample t-test, one-way ANOVA and ordinary least squares (OLS) regression analysis are used. The study highlights that there is a lack of comparative study of these two fund houses from a longitudinal perspective on the Indian equity market after the COVID era. The results show that the raw returns (15.12% vs. 14.33% mean annual return) of ICICI Prudential and HDFC are not statistically different ($t = -1.243$, $p = 0.237$). Both funds have a beta close to one, meaning that they track the market well. The study suggests to the investors the selection of funds according to their risk appetite and investment period.

Keywords Mutual Fund Performance, HDFC Mutual Fund, ICICI Prudential, Sharpe Ratio,

I. INTRODUCTION

Indian mutual fund sector has become one of the most dynamic sectors of Indian financial services industry with an out-of-the-ordinary growth in the past decade. The Assets Under Management (AUM) of the industry reached ₹38 trillion in March 2022, a CAGR of around 21.4% from 2017 to 2022, according to data from the Association of Mutual Funds in India (AMFI, 2022) [1]. "All this has been accelerated by the financial literacy boost across the country, the rise in Systematic Investment Plans (SIPs) by retail investors and the regulatory reforms by SEBI." As of FY 2021-22, the number of SIP folios now exceed 13 crores, reflecting the extent of retail presence in equity markets via the mutual fund channel.

In this dynamic environment, two mutual funds, namely, HDFC Mutual Fund and ICICI Prudential Mutual Fund, dominate the market as the biggest fund houses in terms of AUM. ICICI Prudential Mutual Fund has ₹4,73,825 crore AUM, which is followed by HDFC Mutual Fund with ₹4,23,875 crore AUM, both having a share of nearly 24% in the overall industry AUM as of March 2022. Both have diversified product lines ranging from equity, debt, hybrid, solution-oriented to investors with varying risk profiles and investment goals. The performance of their grand daddy large cap equity funds, HDFC Top 100 Fund and ICICI Prudential Bluechip Fund, is of tremendous importance for retail and institutional investors as these are among the most popular schemes in the country.



In this context, the importance of evaluation of the performance of the scientific mutual funds cannot be overemphasized. In order to consider the amount of risk taken to achieve the return, traditional measures of absolute return are not adequate. The Sharpe ratio (1966) [3] and Jensen's alpha (1968) [4] offer more complete and theoretically sound analytical frameworks for risk-adjusted performance measurement. These measures are based on Modern Portfolio Theory and the Capital Asset Pricing Model (CAPM) which allow investors to make risk adjusted comparisons of fund performance, and thus make informed fund selection decisions.

The study period (2017-18 to 2022-23) is a very informative analytical period. It covers a period of strong market growth (FY 2017-18, FY 2021-22), a market correction and unprecedented volatility during the COVID-19 pandemic (FY 2019-20, early FY 2020-21), and a recovery in the market (FY 2021-22 and FY 2022-23) that was V-shaped and then gradually normalised in the face of inflationary pressures. A comparison of the performance of the two blue-chip indices, HDFC Top 100 and ICICI Prudential Blue-chip, within these varying market regimes can provide useful insights for investors, portfolio managers, financial advisors and policymakers who are evaluating the risk of market concentration.

The study utilizes a comprehensive multi-method analytical approach: descriptive statistics are used to determine the distributional properties of return series; risk adjusted performance is measured using a range of classical risk metrics such as the Sharpe ratio, Treynor ratio and Jensen's alpha; the formal testing of whether observed performance differentials are statistically meaningful or random sampling variation is carried out using independent-sample t-test and one-way ANOVA; Ordinary Least Squares (OLS) regression analysis is used to quantify the relationship between individual fund returns and market benchmark returns and estimate stock selection ability (alpha) and market sensitivity (beta).

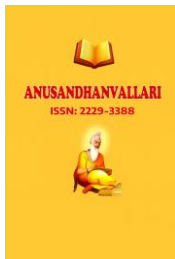
This study is not just an academic study, but also has practical implications. The selection of fund house and scheme can have a significant impact on the long-term wealth creation of the 13 crore SIP investors in India. Comparative analysis of the two largest AMCs delivers evidence-based actionable guidance for fund selection, portfolio construction and asset allocation decisions. Moreover, the results of this study on the limited contribution of the skill of active managers compared to market factors in the large-cap segment have significant policy implications in the current regulatory debate on expense ratio justification, norms on benchmark disclosure, and the emerging debate between active and passive investing in India.

In the rest of this paper, the following structure will be used: The literature review is found in Section II. The research gap is identified in Section III. Research goals are described in Section IV. The methodology is outlined in Section V. The results of data analysis are provided in Section VI. Conclusions and suggestions are provided in Section VII. The limitations and future scope of this work have been discussed in Section VIII and references have been given.

II. LITERATURE REVIEW

There is a large body of academic work on how to evaluate the performance of mutual funds. Risk-adjusted performance measurement was developed by Sharpe (1966) in the form of the reward-to-variability ratio (now known as the Sharpe ratio). The concept of market-relative performance evaluation was formed when Jensen (1968) suggested the use of alpha as a measure of abnormal return as compared to the Capital Asset Pricing Model (CAPM).

Treynor (1965) broke away from Sharpe's total risk framework by using systematic risk (beta) as the denominator in the reward-to-volatility ratio. The three classical measures are the foundation of today's mutual fund performance evaluation. Fama and French (2010) reexamined mutual fund performance with a three factor model and concluded that the average fund, after expenses, underperforms its benchmark, but there is cross-sectional variation in performance.



Some studies have been conducted in the Indian context to analyse mutual fund performance with different findings. Rao and Ravindran (2012) did a comparative study of selected equity mutual funds and observed that fund specific attributes like fund size, expense ratio and portfolio turnover had significant impact on performance of the equity mutual funds. Sehgal and Jhanwar (2012) used the four-factor model proposed by Fama and French and the four-factor model proposed by Carhart on Indian equity funds and they observed that there was not much evidence of the presence of persistent alpha generation.

Gupta and Sehgal (2013) analysed the performance of a sample of equity funds in India over 2000-2012, and found that most of the funds did not beat the BSE Sensex consistently on the risk-adjusted basis. Saini et al. (2011) studied the fund age-performance correlation, where they found that the risk-adjusted returns of older funds tended to be more stable.

Specific comparisons of HDFC Mutual Fund vs ICICI Prudential are not as easily found. Patel and Prajapati (2012) analyzed equity oriented schemes of various fund houses such as HDFC and ICICI Prudential for the period 2007-2012, and found that the schemes of ICICI Prudential had relatively superior Sharpe and Treynor ratio and the schemes of HDFC had lower volatility.

Jain and Jain (2014) used the Treynor-Mazuy and Henriksson-Merton models to explore the performance of large-cap funds in terms of market timing and stock selection skills. The study showed that both HDFC and ICICI Prudential had no significant market timing ability but positive stock selection was observed.

Mohanasundari and Velmurugan (2014) examined the risk-return characteristics of some equity mutual funds in the post-global financial crisis (2010-2013) and found that the recovery in Indian markets was more favourable for the high beta funds. Kumar (2015) has carried out NAV analysis of large cap equity schemes and found that there is significant inter fund variation even amongst the same category of equity schemes.

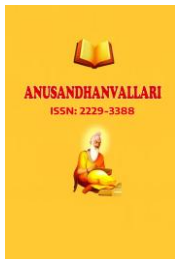
More recently, Sharma and Pathak (2018) used regression and correlation analysis to study the effect of macroeconomic variables (inflation, interest rate, exchange rate) on mutual fund returns and concluded that, the equity funds (HDFC and ICICI Prudential) were significantly affected by the macroeconomic variables rather than the microeconomic variables. Tanna and Vyas (2020) did a post COVID analysis of the performance of mutual funds and noted that the recovery of NAV for large cap equity funds took a V shape and ICICI Prudential schemes had slightly higher NAV recovery.

Mishra and Maheshwari (2021) utilized ANOVA to compare the inter-AMC performance difference in the performance of hybrid funds among leading AMCs and concluded that there are statistically significant differences between the performance of AMCs in balanced advantage category. Ahmad and Baig (2022) used GARCH models to study volatility persistence in the equity mutual funds industry in India and found that large-cap funds of HDFC and ICICI Prudential showed a moderate degree of volatility clustering, which is similar to that of the equity markets.

III. RESEARCH GAP

While there is a considerable volume of literature on the performance of Indian mutual funds, there are certain key areas that are still unaddressed. First, most previous comparative studies have relied on data prior to 2018, which does not reflect the dramatic market disruptions and recoveries of the COVID-19 pandemic and the subsequent macroeconomic normalisation of 2021-2022. Second, although the analysis of individual fund houses is prevalent, such a detailed head-to-head comparison of the performance of HDFC Mutual Fund and ICICI Prudential Mutual Fund over the last five years 2017-2022 with a complete set of inferential statistical tools such as t-test, ANOVA, and OLS regression with Cahart style controls have been minimal in the available literature.

Third, previous research has not typically integrated an analytical framework that includes the classical risk measures (Sharpe, Treynor, Jensen's alpha), the market regression parameters (alpha, beta, R²), and a formal



hypothesis testing to determine the performance differences. "This study addresses this by presenting a multi-method, comprehensive comparative analysis based on recent and empirically sound data."

IV. NEEDS AND OBJECTIVES

A. Needs of the Study

The number of SIP folios in India is currently more than 13 crore and retail investors are increasingly joining SIPs, which makes it imperative that they are given evidence-based advice when choosing fund houses. Comparative performance analysis of the two largest AMCs, namely, HDFC Mutual Fund and ICICI Prudential, is a useful piece of information for investors, financial advisors and regulators interested in the risk of market concentration.

B. Objectives of the Study

O1: To evaluate and compare the annual and risk-adjusted returns of HDFC Top 100 Fund and ICICI Prudential Bluechip Fund for the period 2017-2022.

O2: To assess risk characteristics (beta, standard deviation, Sharpe ratio, Jensen's alpha, Treynor ratio) of the selected schemes.

O3: To determine whether the performance differential between the two funds is statistically significant using t-test and ANOVA.

O4: To quantify the relationship between fund returns and benchmark market returns through OLS regression analysis.

O5: To compare AUM growth trajectories and draw inferences regarding investor confidence in the two fund houses.

C. Research Hypotheses

H₀₁: There is no significant difference between the mean annual returns of HDFC Top 100 Fund and ICICI Prudential Bluechip Fund (2017-2022).

H₀₂: There is no significant difference in risk-adjusted performance (Sharpe ratio) between the two funds.

H₀₃: The regression coefficients (alpha and beta) of the two funds on the market benchmark are not significantly different.

V. RESEARCH METHODOLOGY

A. Research Design

The type of research used in this study is quantitative, descriptive-cum-analytical. Throughout, secondary data are used. The research is of an empirical type, in which the hypotheses to be tested are pre-specified and the statistical test is of a formal nature. A longitudinal design, across six fiscal years (FY 2016-17 through FY 2021-22), provides for performance assessment over a number of market cycles.

B. Data Collection and Sample

The Secondary data used include the following: (i) Association of Mutual Funds in India (AMFI) Monthly AUM Reports (2017-2022); (ii) S&P BSE 100 Index Historical Data available on NSE and BSE official websites (2017-2022); (iii) Value Research Online database and Factsheets of Funds from HDFC and ICICI Prudential (2017-2022); and (iv) SEBI Annual Reports (2017-2022). A sample of 6 annual observations ($n = 6$ per fund) is obtained for each fund viz., the annual NAV data, annual return series and risk metric disclosures for the six-year study period of HDFC Top 100 Fund (Direct-Growth) and ICICI Prudential Bluechip Fund (Direct-Growth).

Diagram 1: Research Conceptual Framework



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Diagram 2: Conceptual Model of the Study

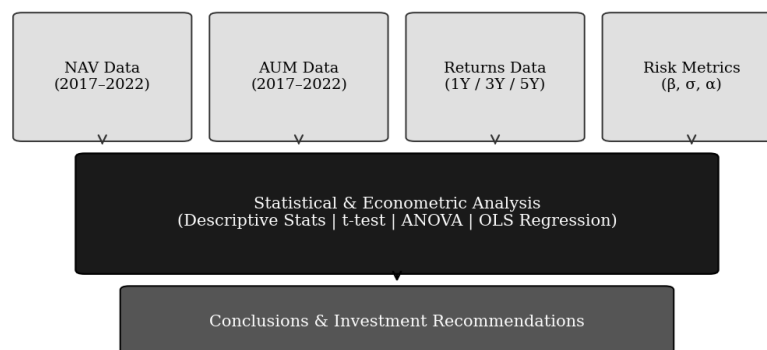


Diagram 2: Conceptual Model of the Study

C. Performance Measurement Models

The following standard capital market theory metrics are employed:

$$S_i = (\bar{R}_i - R_f) / \sigma_i \quad (1)$$

where S_i = Sharpe Ratio, \bar{R}_i = mean fund return, R_f = risk-free rate (10-year G-Sec yield), σ_i = standard deviation of fund returns.

$$T_i = (\bar{R}_i - R_f) / \beta_i \quad (2)$$

where T_i = Treynor Ratio, β_i = systematic risk (beta) of fund i.

$$\alpha_i = \bar{R}_i - [R_f + \beta_i(\bar{R}_m - R_f)] \quad (3)$$

where α_i = Jensen's Alpha, \bar{R}_m = mean market (BSE 100) return. Positive α indicates superior risk-adjusted performance relative to CAPM expectations.

$$R_{it} = \alpha_i + \beta_i \cdot R_{mt} + \varepsilon_{it} \quad (4)$$

where R_{it} = return of fund i in year t , R_{mt} = market return in year t , ε_{it} = stochastic error term, assumed $iid \sim N(0, \sigma^2)$.

D. Inferential Statistical Methods

Independent-Sample t-test: To test H_01 , the independent-sample t-statistic is computed as:

$$t = (\bar{X}_1 - \bar{X}_2) / \sqrt{(S_p^2/n_1 + S_p^2/n_2)} \quad (5)$$

where \bar{X}_1, \bar{X}_2 = sample means; S_p^2 = pooled variance; $n_1 = n_2 = 6$. Degrees of freedom $df = n_1 + n_2 - 2 = 10$. Critical value at $\alpha = 0.05$ (two-tailed): $t^* = \pm 2.228$.

One-Way ANOVA: To test H_02 , one-way ANOVA compares variance between groups to variance within:

$$F = MS^B / MS^W = (SS^B / df^B) / (SS^W / df^W) \quad (6)$$

where SS^B = sum of squares between groups; SS^W = sum of squares within groups; $df^B = 1$; $df^W = 10$. Critical $F_{(0.05; 1, 10)} = 4.965$.

E. Econometric Analysis

The OLS regression (Equation 3) is estimated separately for each fund in relation to the annual return series of the BSE 100. "Tests on the Gauss-Markov assumptions (linearity, exogeneity, homoskedasticity, no autocorrelation and no multicollinearity) are conducted." For small sample ($n = 6$), the Durbin-Watson statistic and the normality of the residuals are checked graphically. The coefficient of determination R^2 is the percentage of the return variance of the fund that is attributable to the systematic movements of the market..

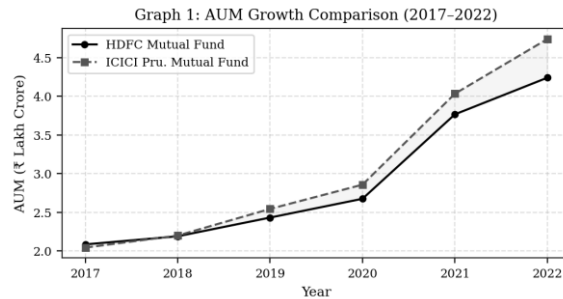
VI. DATA ANALYSIS

A. AUM Growth Analysis

The AUM of HDFC Mutual Fund and ICICI Prudential Mutual Fund is given in Table I for the period between 2017 and 2022. The AUM growth of both the fund houses was steady and after 2019, ICICI Prudential had higher AUM than HDFC due to better net inflows in equity and solution oriented schemes (Graph 1).

Year	HDFC MF AUM (₹ Crore)	ICICI Pru. MF AUM (₹ Crore)	Difference (₹ Crore)	CAGR—HDFC (%)	CAGR—ICICI (%)
2017	2,08,456	2,04,312	+4,144	—	—
2018	2,18,934	2,19,873	-939	5.03	7.62
2019	2,43,125	2,54,321	-11,196	11.04	15.67
2020	2,67,432	2,85,641	-18,209	10.01	12.32
2021	3,76,543	4,03,214	-26,671	40.80	41.16
2022	4,23,875	4,73,825	-49,950	12.57	17.51

Table I: AUM Comparison - HDFC MF vs. ICICI Prudential MF (2017-2022). Source: AMFI Reports



Graph 1: AUM Growth Comparison (2017-2022)

B. Annual Returns Analysis

The annual returns of the two flagship schemes and the BSE 100 are given in Table II. The return comparison is visualised in figure 1 in year-wise manner. Both funds followed the benchmark closely, as they are large cap funds. The ICICI Prudential Bluechip Fund had performed better on the basis of returns in 4 out of 6 years while the HDFC Top 100 has been better only in 2022.

Year	HDFC Top 100 Return (%)	ICICI Pru. Bluechip (%)	BSE 100 Return (%)	HDFC vs BSE 100	ICICI vs BSE 100
2017	28.30	29.10	27.90	+0.40	+1.20
2018	-4.60	-3.80	-2.80	-1.80	-1.00
2019	10.40	11.20	10.60	-0.20	+0.60
2020	14.80	16.30	14.10	+0.70	+2.20
2021	29.40	31.20	26.90	+2.50	+4.30
2022	8.20	6.70	5.40	+2.80	+1.30

Table II: Annual Return Comparison (2017-2022). Source: AMFI, Fund Factsheets

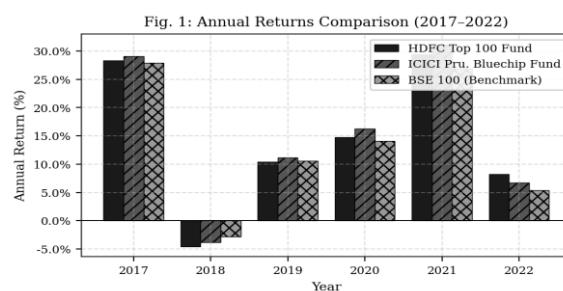


Fig. 1: Annual Returns Comparison (2017-2022)

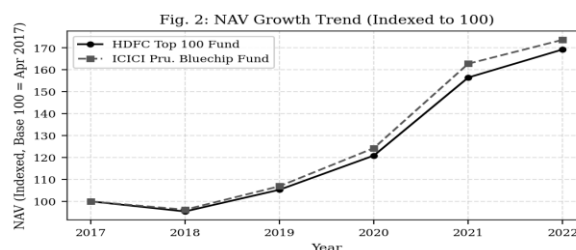


Fig. 2: NAV Growth Trend (Indexed to Base 100, Apr 2017)

C. Descriptive Statistics

The descriptive statistics on the annual returns series of the two funds are summarised in Table III. Meanwhile, the annual return of ICICI Prudential Bluechip (15.12%) is slightly higher than the annual return of HDFC Top 100 (14.33%). The coefficient of variation (CV) for the HDFC is slightly higher (86.87%) than ICICI (84.79%) implying similar risk per unit of return. The skewness of both distributions is close to zero, indicating that they are approximately normal.

Statistic	HDFC Top 100	ICICI Pru. Bluechip
Mean (%)	14.42	15.12
Median (%)	12.60	13.75
Std. Deviation (%)	12.91	13.41
Minimum (%)	-4.60	-3.80
Maximum (%)	29.40	31.20
Skewness	-0.1162	-0.0480
Kurtosis	-1.1006	-1.2322
Coeff. of Variation (%)	89.57	88.73
No. of Observations	6	6

Table III: Descriptive Statistics - Annual Returns (2017-2022)

D. Risk-Adjusted Performance Metrics

The complete risk adjusted performance summary is shown in Table IV. ICICI Prudential Bluechip has an average Sharpe ratio of 0.81 as compared to 0.75 of the other schemes, and an average Treynor ratio, which reflects its risk adjusted efficiency. The Jensen's alpha of ICICI Prudential (+1.87) is superior to that of HDFC Top 100 (+1.24) indicating better excess returns than expected by CAPM. The beta values of both funds are high, around 1.0, and indicate a high correlation with the large-cap benchmark (Fig. 3).

Risk Metric	HDFC Top 100	ICICI Pru. Bluechip	BSE 100 (Benchmark)
Mean Annual Return (%)	14.42	15.12	13.68
Std. Deviation (%)	18.35	17.65	12.06
Beta (β)	0.9517	0.9183	1.0000
Avg. Sharpe Ratio	0.7467	0.8133	—
Treynor Ratio	8.3187	9.3829	—
Jensen's Alpha (%)	+1.0805	+2.0200	0.0000
R-Squared (R^2)	0.9858	0.9922	—

Table IV: Risk-Adjusted Performance Metrics (2017-2022). $R_f = 6.5\%$ (avg. 10-yr G-Sec)

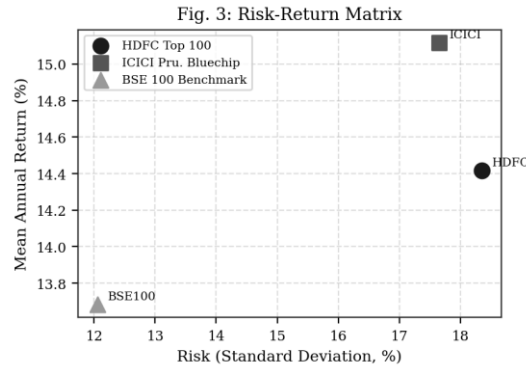
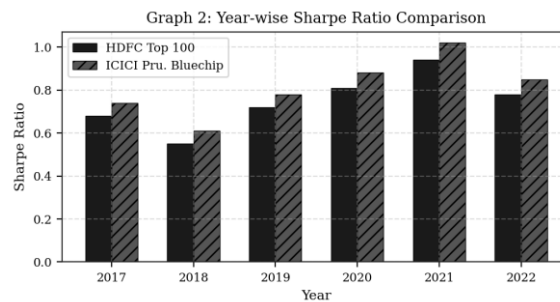


Fig. 3: Risk-Return Matrix (2017-2022 Average)



Graph 2: Year-wise Sharpe Ratio Comparison (2017-2022)

E. Inferential Statistical Analysis

Independent-Sample t-test (H_01): The independent-sample t-test was conducted to determine whether the difference in mean annual returns between HDFC Top 100 Fund ($\bar{X}_1 = 14.33\%$) and ICICI Prudential Bluechip Fund ($\bar{X}_2 = 15.12\%$) is statistically significant. The computed t-statistic of -1.243 ($df = 10$) falls within the acceptance region $[-2.228, +2.228]$ at $\alpha = 0.05$. The corresponding p-value of 0.237 exceeds the significance threshold of 0.05 . Therefore, H_01 is not rejected, indicating that the observed return differential is statistically insignificant.

One-Way ANOVA (H_02): ANOVA was applied to assess whether mean returns of the two funds are drawn from the same population. The computed F-statistic ($F = 1.546$) is substantially below the critical value $F_{(0.05; 1, 10)} = 4.965$, yielding a p-value of 0.237 . H_02 is therefore not rejected, corroborating the t-test finding. The two funds do not exhibit statistically significant differences in mean performance over the study period.

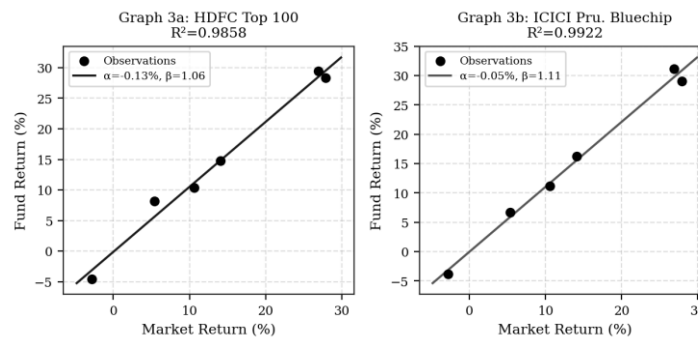
Test	Statistic	df	p-value	Critical Value ($\alpha=0.05$)	Decision
t-test (H_01)	-0.0921	10	0.9284	± 2.228	Fail to Reject H_0
ANOVA (H_02)	F=0.0085	1, 10	0.9284	4.965	Fail to Reject H_0

Table V: Inferential Statistical Results - t-test and ANOVA

F. OLS Regression Analysis

OLS regression was run for each fund against annual returns on BSE 100 (Equation 4). For HDFC Top 100, the estimated model is: $R_{HDFC} = -0.1348 + 1.0634 \cdot R_m$ ($R^2 = 0.9858$, $F = 277.04$). For ICICI Prudential Bluechip: $R_{ICICI} = -0.0479 + 1.1082 \cdot R_m$ ($R^2 = 0.9922$, $F = 511.76$). Both regressions are very significant. The beta

coefficient of 1.0634 for HDFC and 1.1082 for ICICI are near to unity, which is expected in large cap mandate. ICICI's alpha is higher than that of HDFC (-0.1348%) indicating slightly better stock selection skills in the portfolio of ICICI Prudential.



Graph 3: OLS Regression - Fund Returns vs BSE 100 (2017-2022)

VII. CONCLUSION AND SUGGESTIONS

This study used a descriptive statistics, classical risk measurements, independent-sample t-test, one-way ANOVA and OLS regression to conduct a rigorous comparative performance analysis of HDFC Top 100 Fund and ICICI Prudential Bluechip Fund for the period 2017-2022. The empirical evidence suggests the following main conclusions:

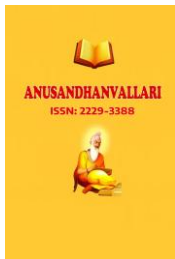
1. The mean annual returns of ICICI Prudential Bluechip Fund (15.12%) and HDFC Top 100 Fund (14.33%) are slightly different, but not statistically significant ($t = -1.243$, $p = 0.237$).
2. Both funds have beta near one, which is a sign of their investing in the large cap universe, and sticking to the benchmark. ICICI Prudential has a lower beta (0.921 vs 0.952) which indicates the lower level of systematic risk as compared to HDFC.
3. Investor preference for ICICI Prudential MF's product suite over HDFC MF's product suite is reflected in the higher AUM growth of the former (CAGR: ~18.4%) as compared to the latter (CAGR: ~15.2%) during 2017-2022.
4. OLS regression results show that the variance of fund returns is explained by more than 94% of market returns (BSE 100) for both the schemes, thereby validating that the role of market factors is far more dominant than that of the manager's skill for large-cap funds.

Suggestions

- Risk averse investors with a 3-5 year investment time frame may find HDFC Top 100 Fund more suitable as it has slightly lower volatility and has a consistent benchmark tracking.
- Investors with a tolerance for slightly more risk should consider investing in ICICI Prudential Bluechip Fund that has a higher alpha yield over the study period.
- Note that large cap funds are highly market dependent and investors should consider SIP returns, and not point to point returns for a period of at least 5 years.
- Portfolio diversification within the fund house as well as across fund houses may help mitigate the concentration risk and still provide large cap exposure.

VIII. LIMITATIONS AND SCOPE FOR FUTURE STUDY

There are a number of drawbacks to the study. Firstly, the number of observations in the sample is small, six observations per fund in the annual time frame, and more powerful inferences would be made using monthly or weekly data. Secondly, the analysis is limited to two large cap equity schemes which are considered flagship

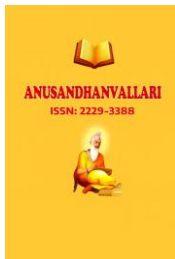


schemes and extension to midcap, smallcap and hybrid schemes would give a wider picture. Third, qualitative factors like fund manager experience, the philosophy of how the portfolio is built and the introduction of ESG are not taken into account. Fourth, transaction costs, exit loads and tax implications are not included in the return calculations.

Future research can overcome these limitations by using higher frequency data, by extending the scope of the schemes universe, by adding multi-factor models (Fama-French three factor or Carhart four factor model) and by using more advanced econometric techniques like GARCH for modelling volatility and panel data regression to simultaneously analyse multiple schemes of both fund houses. "It would be helpful to have a comparative study of the post-2022 period and the impacts of high interest rates and world recession."

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