Journal of Informatics Education and Research
ISSN: 1526-4726
Vol 5 Issue 3 (2025)

Sectoral Bets Or Strategic Allocations? Evaluating Indian Mutual Funds Through Efficiency Models

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Abstract
This study examines the performance of 16 sectoral mutual funds across four major industries—Infrastructure, Banking, Pharma, and FMCG—over a five-year horizon. Using metrics such as average returns, absolute returns, benchmark comparisons, risk profiles, and performance ratios (Sharpe, Treynor, Jensen's Alpha, and Fama decomposition), the research identifies sector-specific strengths and weaknesses. Infrastructure and Pharma funds show strong absolute returns, with Pharma emerging as the most consistent long-term wealth creator. FMCG funds deliver stable but moderate returns, while Banking funds underperform across most horizons. An efficient portfolio, constructed through the Markowitz optimization model, highlights a dominance of FMCG and BFSI funds, generating a 9.5% return with controlled volatility. The findings underscore the relevance of sectoral diversification and the importance of risk-adjusted performance for long-term investment strategies.

Keywords: Sectoral mutual funds, risk-return analysis, portfolio efficiency, Markowitz model, Pharma funds, Infrastructure funds, FMCG funds, Banking funds, Indian financial markets, investment strategies

Introduction
Mutual funds remain a pivotal investment avenue for Indian investors, offering diversification, liquidity, and professional management (Ranganathan, 2023). Among these, sectoral funds concentrate investments within specific industries, amplifying both potential returns and risks. While such funds provide targeted exposure, they also carry sector-specific volatility, making performance evaluation crucial for portfolio construction (Tripathy, 2017).
The Indian financial market has witnessed rapid growth in sector-focused investments, driven by investor demand for thematic opportunities and the rising importance of industries such as infrastructure, banking, healthcare, and consumption (Goyal & Joshi, 2020). Prior studies have highlighted that sectoral funds often outperform during favorable economic cycles but lag during downturns (Gupta & Sehgal, 1998; Chander & Singh, 2004).

This research extends the discourse by empirically analyzing the risk-return dynamics of sectoral funds and constructing an efficient portfolio. The study aims to guide investors in identifying consistent performers while balancing return expectations with risk tolerance.

Literature Review

Sectoral and thematic mutual funds in India have attracted increasing attention in recent years, both in academic research and industry reporting. From an academic standpoint, scholars have explored different portfolio optimization techniques tailored to sector-specific investments. Sen and Dutta (2022) demonstrated that mean–variance optimized portfolios, when tested on Indian sectoral data, produced consistently superior cumulative returns, particularly when evaluated using Sharpe, Sortino, and Calmar ratios. Similarly, Dhingra, Sharma, and Gupta (2021) applied Principal Component Analysis (PCA) to filter financial ratios and create stochastic portfolio optimization strategies, finding these models more robust in downside risk control compared to traditional mean–variance frameworks. Earlier, Chopra (2020) introduced a Data Envelopment Analysis (DEA) model to evaluate the efficiency of 98 Indian mutual funds, incorporating multiple dimensions such as cost, risk, and information ratio, thereby providing a comprehensive performance benchmark.

Alongside academic contributions, industry data highlights significant developments in sectoral fund inflows and investor behavior. Sectoral and thematic funds accounted for nearly 34% of equity fund inflows in 2024, with energy, infrastructure, and manufacturing together representing more than half of these investments (Ventura Securities, 2024). A record inflow of ₹22,351 crore was reported in June 2024 alone, supported largely by new fund offers (NFOs), which contributed over ₹12,974 crore (Indian Express, 2024). Financial Express (2024) further noted that nearly half of all equity fund inflows in the first half of FY25 were directed to sectoral/thematic schemes, underpinned by 22 new NFO launches. This momentum was echoed by Business Today (2024), which observed strong investor enthusiasm in manufacturing and PSU-oriented funds, both of which posted substantial growth in assets under management and returns above 55% in the prior year.

However, these inflows have been accompanied by cautionary insights. Value Research (2024) reported a significant return gap between fund performance and investor returns, as poor timing decisions often resulted in investors earning substantially less than reported category averages. This gap was especially pronounced in cyclical sectors such as infrastructure and PSUs. Moneycontrol (2024) also emphasized the volatility of sectoral categories, noting PSU funds delivered nearly 89% returns in one year, while other categories such as infrastructure, auto, and energy also recorded exceptional gains, reflecting both the opportunities and risks associated with thematic investing.

Together, both academic literature and market reports indicate that while sectoral mutual funds can enhance portfolio performance and capture thematic opportunities, they also demand disciplined timing and careful portfolio construction. The evidence highlights not only the rising popularity of such funds but also the potential pitfalls, particularly for retail investors swayed by short-term rallies.

Objectives

1. To evaluate the performance of selected sectoral mutual funds in India across Infrastructure, Banking, Pharma, and FMCG.
2. To compare sectoral fund returns with their respective benchmarks.
3. To assess risk-return profiles using Beta, Standard Deviation, and performance ratios.
4. To construct an efficient portfolio using the Markowitz model.

Scope

- Covers 16 mutual funds across four key sectors: Infrastructure, Banking, Pharma, and FMCG.
- Time horizon: 1-Year to 5-Year returns (2020–2024).
- Performance metrics: Average returns, Absolute returns, Risk measures, Sharpe, Treynor, Jensen's Alpha, Fama decomposition.
- Benchmark comparison with sectoral indices such as NIFTY Financial Services TRI, BSE Infra TRI, NIFTY Healthcare TRI, NIFTY India Consumption TRI.

Data Analysis & Interpretation

The data analysis is presented over 6 sections, mentioning Average returns, Absolute returns, Comparison with Benchmark, Risk profile, performance ratios, and finally the Efficient portfolio for funds selected over 4 sectors.

I. AVERAGE RETURNS

Table 1: AVERAGE RETURNS

FUND NAME	CATEGORY	1-Year 2024	2-Years 2023-2024	3-Years 2022-2024	4-Years 2021-2024	5-Years 2020-2024
Franklin Build India Fund - Direct Plan	Sectoral- Infra	11.45	14.64	11.55	12.85	11.16
ICICI Prudential Infrastructure Fund - Direct Plan	Sectoral- Infra	11.07	13.41	12.67	13.93	11.82
LIC MF Infrastructure Fund - Direct Plan	Sectoral- Infra	17.75	16.83	12.61	13.72	11.40
SBI Infrastructure Fund - Direct Plan	Sectoral- Infra	8.69	12.92	10.03	11.82	10.47
Nippon India Banking & Financial Services Fund - Direct Plan	Sectoral-Banking	4.94	7.27	7.85	8.88	6.90
Invesco India Financial Services Fund - Direct Plan	Sectoral-Banking	8.68	9.55	8.47	8.05	7.36
SBI Banking & Financial	Sectoral-Banking	8.59	8.04	7.30	7.19	6.84

Services Fund - Direct Plan						
Sundaram Financial Services Opportunities Fund - Direct Plan	Sectoral-Banking	4.03	8.09	8.00	7.86	7.26
DSP Healthcare Fund - Direct Plan	Sectoral- Pharma	15.10	14.15	8.62	8.88	12.17
ICICI Prudential Pharma Healthcare and Diagnostics (P.H.D) Fund - Direct Plan	Sectoral- Pharma	17.05	15.98	9.65	9.17	12.11
SBI Healthcare Opportunities Fund - Direct Plan	Sectoral- Pharma	15.42	14.75	9.23	9.07	11.76
UTI Healthcare Fund - Direct Plan	Sectoral- Pharma	15.59	14.81	8.32	8.26	11.15
ICICI Prudential Bharat Consumption Fund - Direct Plan	Sectoral- FMCG	6.69	9.70	8.00	8.44	8.04
Mirae Asset Great Consumer Fund - Direct Plan	Sectoral- FMCG	7.52	10.05	8.02	9.23	8.68
Nippon India Consumption Fund - Direct Plan	Sectoral- FMCG	7.97	9.23	8.32	9.31	9.63
SBI Consumption Opportunities	Sectoral- FMCG	9.32	10.39	8.99	10.12	9.48

Fund - Direct Plan						

The dataset includes 16 mutual funds across four major sectors: Infrastructure, Banking, Pharma, and FMCG. Average returns for each fund over one-year to five-year periods are analyzed to understand sectoral performance trends and identify consistent performers.

A. Infrastructure Funds

Four funds fall under the infrastructure category: Franklin Build India, ICICI Prudential Infrastructure, LIC MF Infrastructure, and SBI Infrastructure. Key observations:

- **Short-term performance (1-Year):** LIC MF Infrastructure leads with 17.75%, followed by Franklin Build India (11.45%). SBI Infrastructure records the lowest short-term return at 8.69%.
- **Medium-term performance (3-Year & 4-Year):** Returns are generally declining from the initial spike seen in LIC MF Infrastructure, with 3-year returns averaging around 11–12% for most funds.
- **Long-term stability (5-Year):** Franklin Build India and ICICI Prudential Infrastructure show relative stability with returns of 11.16% and 11.82%, respectively. LIC MF Infrastructure shows a declining trend from its 1-year peak to 11.40% over five years.

While LIC MF Infrastructure offers high short-term returns, Franklin Build India and ICICI Prudential Infrastructure demonstrate better long-term stability, which is crucial for risk-averse investors.

B. Banking Funds

Four funds in the banking sector include Nippon India Banking, Invesco India Financial Services, SBI Banking & Financial Services, and Sundaram Financial Services Opportunities.

- **Short-term performance (1-Year):** Invesco India Financial Services leads with 8.68%, while Nippon India Banking lags at 4.94%.
- **Medium-term performance (3-Year & 4-Year):** Returns converge slightly in the 7–8% range, indicating less volatility than the infrastructure sector.
- **Long-term stability (5-Year):** Returns are relatively modest, with Invesco (7.36%) slightly outperforming peers, suggesting steady but moderate growth potential.

Banking funds exhibit low volatility and moderate returns. Nippon India Banking shows lower performance, implying sector sensitivity to financial market fluctuations.

C. Pharma Funds

The pharma sector includes DSP Healthcare, ICICI Prudential PHD Fund, SBI Healthcare Opportunities, and UTI Healthcare Fund.

- **Short-term performance (1-Year):** ICICI Prudential PHD Fund leads at 17.05%, followed closely by UTI Healthcare (15.59%).
- **Medium-term performance (3-Year & 4-Year):** Returns decline, averaging around 8–9%, highlighting volatility in the sector.
- **Long-term stability (5-Year):** Returns rebound to 11–12%, suggesting strong recovery and potential for consistent long-term growth.

Pharma funds show high short-term volatility but robust long-term performance. This sector may be suitable for investors seeking higher long-term returns with tolerance for medium-term fluctuations.

D. FMCG Funds

Four funds under FMCG: ICICI Prudential Bharat Consumption, Mirae Asset Great Consumer, Nippon India Consumption, and SBI Consumption Opportunities.

- **Short-term performance (1-Year):** SBI Consumption Opportunities Fund outperforms with 9.32%, while ICICI Prudential Bharat Consumption lags at 6.69%.
- **Medium-term performance (3-Year & 4-Year):** Returns show moderate growth with low volatility, averaging around 8–9%.
- **Long-term stability (5-Year):** Returns remain consistent, with Nippon India Consumption achieving the highest 5-year return of 9.63%.

FMCG funds provide moderate but stable returns across all time periods, making them attractive for conservative investors seeking lower risk.

Comparative Sectoral Insights

1. **Short-term performance:** Pharma and Infrastructure funds tend to offer higher 1-year returns, indicating potential for aggressive short-term gains.
2. **Medium-term volatility:** Banking and FMCG funds show more stability, whereas Infrastructure and Pharma experience noticeable fluctuations.
3. **Long-term consistency:** FMCG and select Infrastructure funds demonstrate stable long-term growth, whereas Pharma funds, despite volatility, recover to offer strong 5-year returns.
4. **Investor considerations:** Short-term investors may favor LIC MF Infrastructure or ICICI Prudential PHD Fund, while risk-averse long-term investors may prefer FMCG or Franklin Build India Fund.

II. ABSOLUTE RETURNS

Further we move on analysing the Absolute returns for selected funds. The results are presented in Table 2.

Table 2: ABSOLUTE RETURNS

FUND NAME	CATEGORY	1-Year	2-Years	3-Years	4-Years	5-Years
		2024	2023-2024	2022-2024	2021-2024	2020-2024
Franklin Build India Fund - Direct Plan	Sectoral- Infra	28.77	95.92	118.85	226.02	246.52
ICICI Prudential Infrastructure Fund - Direct Plan	Sectoral- Infra	27.82	84.30	138.83	262.46	278.49
LIC MF Infrastructure Fund - Direct Plan	Sectoral- Infra	48.37	116.56	135.94	253.15	256.96
SBI Infrastructure Fund - Direct	Sectoral- Infra	21.15	81.18	98.50	196.77	225.53

Plan						
Nippon India Banking & Financial Services Fund - Direct Plan	Sectoral-Banking	10.95	38.22	65.59	120.18	99.05
Invesco India Financial Services Fund - Direct Plan	Sectoral-Banking	21.22	54.35	73.35	105.40	111.92
SBI Banking & Financial Services Fund - Direct Plan	Sectoral-Banking	19.59	43.26	61.34	87.26	100.55
Sundaram Financial Services Opportunities Fund - Direct Plan	Sectoral-Banking	8.44	43.66	67.05	99.69	107.71
DSP Healthcare Fund - Direct Plan	Sectoral- Pharma	41.51	95.28	83.42	126.40	310.53
ICICI Prudential Pharma Healthcare and Diagnostics (P.H.D) Fund - Direct Plan	Sectoral- Pharma	48.69	113.44	97.11	133.35	305.56
SBI Healthcare Opportunities Fund - Direct Plan	Sectoral- Pharma	43.43	100.85	91.25	129.60	287.34
UTI Healthcare Fund - Direct Plan	Sectoral- Pharma	43.29	101.80	78.47	113.34	261.17
ICICI Prudential Bharat Consumption Fund - Direct	Sectoral- FMCG	16.83	57.87	74.70	118.74	147.47

Plan						
Mirae Asset Great Consumer Fund - Direct Plan	Sectoral- FMCG	18.99	60.84	73.04	133.91	166.08
Nippon India Consumption Fund - Direct Plan	Sectoral- FMCG	20.42	54.12	78.18	136.19	199.45
SBI Consumption Opportunities Fund - Direct Plan	Sectoral- FMCG	24.19	63.02	86.61	152.86	195.30

A. Infrastructure Funds

The infrastructure sector (Franklin Build India, ICICI Prudential Infrastructure, LIC MF Infrastructure, SBI Infrastructure) shows very strong long-term compounding.

- **1-Year:** LIC MF Infrastructure is the best performer (48.37%), clearly ahead of peers. Franklin (28.77%) and ICICI Prudential (27.82%) follow closely, while SBI trails at 21.15%.
- **2-Year to 3-Year:** The returns increase sharply, particularly for LIC (116.56%, 135.94%) and ICICI Prudential (84.30%, 138.83%).
- **4-Year to 5-Year:** All funds exceed 200% absolute returns by Year 4. ICICI Prudential achieves the highest 5-Year return (278.49%), followed by LIC (256.96%). SBI stays relatively lower at 225.53%.

Infrastructure funds exhibit strong wealth creation over five years, with ICICI Prudential Infrastructure leading in cumulative long-term growth, while LIC MF Infrastructure demonstrates a strong balance of short-term spikes and steady compounding.

B. Banking Funds

This sector includes Nippon India Banking, Invesco India Financial Services, SBI Banking & Financial Services, and Sundaram Financial Services Opportunities.

- **1-Year:** Invesco leads at 21.21%, while Nippon is much lower at 10.95%, reflecting sector volatility.
- **2-Year to 3-Year:** Growth is moderate, with cumulative 2-Year returns ranging from 38–54%. By 3 years, most funds hover between 61–73%.
- **4-Year to 5-Year:** Absolute returns remain under 120%, except Invesco (111.92%). Nippon falls behind with 99.05%, underperforming peers.

Banking funds generate modest cumulative returns compared to infrastructure and pharma. The growth curve is relatively flat after Year 3, suggesting limited compounding power. Invesco is the most consistent, while Nippon India lags significantly.

C. Pharma Funds

Four pharma funds (DSP Healthcare, ICICI Prudential PHD, SBI Healthcare, UTI Healthcare) show significant compounding power over the 5-year horizon.

- **1-Year:** ICICI Prudential PHD (48.69%) and DSP Healthcare (41.51%) lead strongly. SBI and UTI are also robust at ~43%.
- **2-Year:** Absolute returns more than double, ranging between 95–113%.
- **3-Year:** Returns range from 78–97%, slightly moderating compared to 2-Year growth.
- **4-Year:** Consistent expansion continues, with DSP (126.40%) and ICICI (133.35%) maintaining lead.
- **5-Year:** This sector dominates all others in long-term compounding. DSP (310.53%), ICICI PHD (305.56%), and SBI Healthcare (287.34%) far surpass peers across sectors. UTI, though slightly lower, still delivers 261.17%.

Pharma is the strongest long-term wealth creator in the dataset. Despite volatility in medium-term (3-Year phase), the sector rebounds powerfully, with 5-Year absolute returns exceeding 300% in some funds. ICICI PHD and DSP Healthcare emerge as top performers.

D. FMCG Funds

This category includes ICICI Prudential Bharat Consumption, Mirae Asset Great Consumer, Nippon India Consumption, and SBI Consumption Opportunities.

- **1-Year:** SBI Consumption leads with 24.19%, while ICICI Prudential Bharat Consumption is lowest at 16.83%.
- **2-Year:** Absolute returns grow moderately, with Mirae (60.84%) slightly ahead of others.
- **3-Year:** All funds deliver balanced growth between 73–87%, with SBI once again leading.
- **4-Year:** The compounding is consistent, with Nippon India and SBI reaching ~136–152%.
- **5-Year:** Nippon India Consumption delivers the highest (199.45%), followed by SBI (195.30%). Mirae and ICICI Prudential are slightly behind at 166.08% and 147.47%, respectively.

FMCG funds deliver steady, moderate long-term compounding. They are less aggressive than infrastructure or pharma but provide reliable and relatively low-risk growth. Nippon India Consumption emerges as the best performer in this sector.

Cross-Sectoral Comparative Insights

1. **Short-Term (1-Year):** LIC MF Infrastructure (48.37%) and ICICI Prudential PHD Pharma (48.69%) dominate. FMCG and Banking remain modest, below 25%.
2. **Medium-Term (3-Year):** Infrastructure funds like ICICI (138.83%) and LIC (135.94%) lead, showing aggressive compounding. Banking trails significantly (max ~73%).
3. **Long-Term (5-Year):** Pharma funds are the clear winners, with DSP (310.53%) and ICICI PHD (305.56%) providing the highest compounding across the dataset. Infrastructure funds like ICICI (278.49%) also perform strongly. Banking remains the weakest sector (sub-120%). FMCG shows balanced returns, with Nippon India Consumption (~199.45%) providing the best stability-growth mix.

As per the results of Absolute Returns-

- **Pharma** is the strongest long-term wealth creator.
- **Infrastructure** offers aggressive medium-term growth and strong long-term returns.
- **FMCG** provides steady, moderate compounding suited for conservative investors.
- **Banking** is the weakest, underperforming across most horizons.

III. (a) Comparative analysis wrt. to Benchmark performance

Journal of Informatics Education and Research
ISSN: 1526-4726
Vol 5 Issue 3 (2025)

In the next section we move on comparing the fund's performance vis a vis their Benchmark performance. From Table no. 3 to 6.

A. Infrastructure Funds

Table 3: Infrastructure Fund-wise Performance vs Benchmark

Fund Name	**1Y**	**2Y**	**3Y**	**4Y**	**5Y**	**Benchmark (BSE Infra TRI)**	**Benchmark (NIFTY Infra TRI)**
Franklin Build India Fund – Direct	11.45	14.64	11.55	12.85	11.16	17.06	16.41
ICICI Prudential Infrastructure Fund – Direct	12.53	17.03	13.90	16.45	13.82	17.06	16.41
Quant Infrastructure Fund – Direct	20.20	23.69	19.84	23.64	22.61	17.06	16.41

B. Banking & Financial Services Funds

Table 4: Banking & Financial Services Fund-wise Performance vs Benchmark

Fund Name	**1Y**	**2Y**	**3Y**	**4Y**	**5Y**	**Benchmark (NIFTY Financial Services TRI)**
Nippon India Banking & Financial Services – Direct	16.33	16.28	15.45	15.79	13.63	17.10
ICICI Prudential Banking & Financial Services – Direct	15.22	15.39	14.72	15.02	13.35	17.10
Aditya Birla Sun Life Banking & Financial Services – Direct	14.85	14.92	13.66	14.17	12.80	17.10

C. Pharma / Healthcare Funds

Table 5: Pharma / Healthcare Fund-wise Performance vs Benchmark

Fund Name	**1Y**	**2Y**	**3Y**	**4Y**	**5Y**	**Benchmark (NIFTY Healthcare TRI)**
Nippon India Pharma Fund – Direct	16.79	12.36	11.86	14.40	12.18	15.00
SBI Healthcare Opportunities Fund – Direct	15.45	11.98	11.42	13.89	11.74	15.00
Tata India Pharma & Healthcare Fund – Direct	14.67	11.23	10.98	13.45	11.33	15.00

D. FMCG / Consumption Funds

Table 6: FMCG / Consumption Fund-wise Performance vs Benchmark

Fund Name	**1Y**	**2Y**	**3Y**	**4Y**	**5Y**	**Benchmark (NIFTY India Consumption TRI)**
Nippon India Consumption Fund – Direct	15.45	13.56	12.47	14.63	12.18	14.35

Fund Name	**1Y**	**2Y**	**3Y**	**4Y**	**5Y**	**Benchmark (NIFTY India Consumption TRI)**
SBI Consumption Opportunities Fund – Direct	14.28	12.85	11.92	13.89	11.75	14.35
Aditya Birla Sun Life India GenNext Fund – Direct	13.96	12.62	11.57	13.42	11.40	14.35

III. (b) Sector-wise Average Returns vs Benchmarks

Table 7: Sector Average v/s Performance vs Benchmark

Sector	Average Returns	**1Y**	**2Y**	**3Y**	**4Y**	**5Y**
Infra	Avg. of Infra Funds	14.73	18.45	15.10	17.65	15.86
	BSE Infra TRI	17.06	17.06	17.06	17.06	17.06
	NIFTY Infra TRI	16.41	16.41	16.41	16.41	16.41
Banking	Avg. of Banking Funds	15.47	15.53	14.61	15.00	13.26
	NIFTY Financial Services TRI	17.10	17.10	17.10	17.10	17.10
Pharma	Avg. of Pharma Funds	15.64	11.86	11.42	13.91	11.75
	NIFTY Healthcare TRI	15.00	15.00	15.00	15.00	15.00
FMCG	Avg. of FMCG Funds	14.56	13.01	11.99	13.98	11.78
	NIFTY India Consumption TRI	14.35	14.35	14.35	14.35	14.35

The analysis shows clear sectoral differences. Infrastructure funds consistently outperform, with Quant Infrastructure lifting the sector above both benchmarks over time. Banking and financial services funds underperform, making passive exposure more rewarding. Pharma funds show only brief short-term strength but trail their benchmark over longer horizons, limiting alpha. FMCG funds remain close to the benchmark in the short run but lag in the long run, suggesting indices capture sectoral growth more effectively.

IV. Risk profile of funds- The comparative assessment of sectoral funds reveals notable differences in their **risk-return profiles**, as measured by Beta and Standard Deviation.

Table 8: Beta and Standard deviation

		BETA					STANDARD DEVIATION				
		2024	2023-2024	2022-2024	2021-2024	2020-2024	2024	2023-2024	2022-2024	2021-2024	2020-2024
FUND NAME	**SECTOR**	**1-Yr**	**2-Yrs**	**3-Yrs**	**4-Yrs**	**5-Yrs**	**1-Yr**	**2-Yrs**	**3-Yrs**	**4-Yrs**	**5-Yrs**
Franklin Build India Fund - Direct Plan	Infra	0.62	0.60	0.63	0.65	0.74	1.24	1.00	1.04	1.07	1.31
ICICI Prudential Infrastructure Fund - Direct Plan		0.58	0.56	0.60	0.64	0.74	1.15	0.93	0.96	1.01	1.26
LIC MF Infrastructure Fund - Direct Plan		0.89	0.84	0.85	0.86	0.88	1.39	1.09	1.10	1.11	1.31
SBI Infrastructure Fund - Direct Plan		0.71	0.71	0.75	0.78	0.82	0.98	0.82	0.88	0.92	1.17
Nippon India Banking & Financial Services Fund - Direct Plan	Banking	0.87	0.87	0.90	0.89	0.90	1.00	0.88	1.06	1.13	1.54
Invesco India Financial Services Fund - Direct Plan		0.86	0.86	0.88	0.87	0.90	1.07	0.92	1.05	1.10	1.50
SBI Banking & Financial Services Fund - Direct Plan		0.02	0.05	0.07	0.10	0.06	1.08	0.93	1.04	1.11	1.46
Sundaram Financial Services Opportunities Fund - Direct Plan		0.93	0.92	0.93	0.94	0.94	1.10	0.93	1.07	1.14	1.55
DSP Healthcare Fund - Direct Plan	Pharma	0.78	0.78	0.82	0.82	0.80	0.77	0.70	0.80	0.81	0.98

ICICI Prudential Pharma Healthcare and Diagnostics (P.H.D) Fund - Direct Plan		0.91	0.88	0.87	0.87	0.89	0.81	0.72	1.04	1.07	1.02
SBI Healthcare Opportunities Fund - Direct Plan		0.84	0.83	0.85	0.89	0.91	0.76	0.70	0.78	0.84	1.05
UTI Healthcare Fund - Direct Plan		0.88	0.87	0.89	0.88	0.89	0.79	0.70	0.78	0.82	1.02
ICICI Prudential Bharat Consumption Fund - Direct Plan	FMCG	0.76	0.73	0.72	0.76	0.89	0.68	0.57	0.67	0.74	1.04
Mirae Asset Great Consumer Fund - Direct Plan		0.86	0.85	0.86	0.85	0.92	0.78	0.67	0.80	0.81	1.07
Nippon India Consumption Fund - Direct Plan		0.85	0.83	0.83	0.84	0.90	0.75	0.65	0.79	0.81	1.04
SBI Consumption Opportunities Fund - Direct Plan		0.76	0.74	0.75	0.76	0.78	0.78	0.65	0.77	0.81	1.01

Infrastructure funds exhibit moderate to high betas (0.74–0.88), with LIC MF Infrastructure Fund emerging as the most market-sensitive. SBI Infrastructure Fund demonstrates the lowest volatility (1.17), suggesting greater stability relative to peers.

Banking and financial services funds present the highest volatility among all sectors, with Sundaram and Nippon showing both elevated betas (0.93–0.94) and standard deviations (>1.50). Interestingly, SBI Banking & Financial Services Fund has an anomalously low beta (0.06) but still high volatility, indicating idiosyncratic risk factors unrelated to broad market trends.

Healthcare funds are comparatively less volatile, with standard deviation values ranging from 0.98 to 1.05. Within this category, DSP Healthcare Fund is the least volatile, while SBI

Healthcare Opportunities exhibits the highest sensitivity (β=0.91). This suggests that healthcare sector funds provide relatively stable defensive characteristics, though some funds carry elevated market exposure.

FMCG funds generally exhibit high betas (0.78–0.92), reflecting strong co-movement with consumption indices. Mirae Asset Great Consumer Fund records the highest sensitivity (β=0.92), while SBI Consumption Opportunities Fund offers a relatively conservative option (β=0.78, σ=1.01), making it attractive for investors seeking lower volatility exposure within the consumption theme.

Overall, infrastructure and FMCG funds deliver moderate volatility with varying betas, healthcare funds provide defensive characteristics, while banking and financial services funds remain the most volatile and market-sensitive category.

V. **Performance ratios-** Further we move on analysing fund's performance based on the results of Sharpe, Jensen, Treynor and FAMA ratios. Results are presented from table no 9 to 12.

- **Sharpe Ratio** - measures excess return per unit of total risk (volatility). Higher = better risk-adjusted returns.
- **Treynor's Ratio -** similar idea, but uses systematic risk (beta) instead of total risk. Higher = better.
- **Jensen's Alpha** - shows fund manager's stock-picking skill. Positive = fund is beating CAPM expectations.
- **FAMA -** (based on Eugene Fama's performance decomposition) captures how much of a fund's return is due to fund manager's **stock-picking skill and timing ability**, adjusted for risk. Higher positive values reflect strong stock selection and timing skills. Negative or low tells either underperformance, poor timing, or returns largely explained by market factors.

Table 9: Sharpe ratio

FUND NAME	SECTOR	2024	2023-2024	2022-2024	2021-2024	2020-2024
		1-Yr	2-Yrs	3-Yrs	4-Yrs	5-Yrs
Franklin Build India Fund - Direct Plan	Infra	3.68	7.69	4.79	6.48	4.27
ICICI Prudential Infrastructure Fund - Direct Plan		3.66	6.97	6.36	7.92	4.97
LIC MF Infrastructure Fund - Direct Plan		7.80	9.04	5.49	7.04	4.46
SBI Infrastructure Fund - Direct Plan		1.86	7.30	3.95	6.39	4.18
Nippon India Banking & Financial Services Fund - Direct Plan	Banking	-1.93	0.36	1.21	2.62	0.87
Invesco India Financial Services Fund - Direct Plan		1.68	2.83	1.81	1.93	1.20

Journal of Informatics Education and Research
ISSN: 1526-4726
Vol 5 Issue 3 (2025)

SBI Banking & Financial Services Fund - Direct Plan		1.59	1.17	0.70	1.14	0.88
Sundaram Financial Services Opportunities Fund - Direct Plan		-2.59	1.22	1.35	1.69	1.10
DSP Healthcare Fund - Direct Plan		10.65	10.26	2.58	3.64	6.74
ICICI Prudential Pharma Healthcare and Diagnostics (P.H.D) Fund - Direct Plan		12.61	12.61	2.97	3.04	6.42
SBI Healthcare Opportunities Fund - Direct Plan		11.24	11.19	3.42	3.72	5.90
UTI Healthcare Fund - Direct Plan	Pharma	11.08	11.15	2.24	2.86	5.48
ICICI Prudential Bharat Consumption Fund - Direct Plan		-0.27	4.79	2.13	3.40	2.39
Mirae Asset Great Consumer Fund - Direct Plan		0.83	4.65	1.83	4.09	2.92
Nippon India Consumption Fund - Direct Plan		1.46	3.51	2.23	4.18	3.90
SBI Consumption Opportunities Fund - Direct Plan	FMCG	3.15	5.26	3.16	5.18	3.89

Table 10: Treynor's ratio

		2024	2023-2024	2022-2024	2021-2024	2020-2024
FUND NAME	**SECTOR**	**1-Yr**	**2-Yrs**	**3-Yrs**	**4-Yrs**	**5-Yrs**
Franklin Build India Fund - Direct Plan		7.35	12.92	7.92	10.62	7.57
ICICI Prudential Infrastructure Fund - Direct Plan		7.26	11.50	10.24	12.58	8.52
LIC MF Infrastructure Fund - Direct Plan		12.27	11.79	7.14	9.10	6.64
SBI Infrastructure Fund - Direct Plan	Infra	2.57	8.41	4.65	7.56	5.95
Nippon India Banking & Financial Services Fund - Direct Plan		-2.23	0.36	1.42	3.30	1.48
Invesco India Financial Services Fund - Direct Plan		2.10	3.02	2.16	2.43	2.00
SBI Banking & Financial Services Fund - Direct Plan		69.53	20.59	10.80	12.72	20.87
Sundaram Financial Services Opportunities Fund - Direct Plan	Banking	-3.06	1.24	1.55	2.06	1.81
DSP Healthcare Fund - Direct Plan		10.59	9.24	2.50	3.63	8.23
ICICI Prudential Pharma Healthcare and Diagnostics (P.H.D) Fund - Direct Plan	Pharma	11.15	10.21	3.55	3.73	7.40

SBI Healthcare Opportunities Fund - Direct Plan		10.18	9.39	3.13	3.53	6.84
UTI Healthcare Fund - Direct Plan		9.86	8.99	1.98	2.66	6.26
ICICI Prudential Bharat Consumption Fund - Direct Plan		-0.24	3.76	1.99	3.29	2.81
Mirae Asset Great Consumer Fund - Direct Plan		0.75	3.64	1.69	3.87	3.38
Nippon India Consumption Fund - Direct Plan		1.30	2.75	2.10	4.03	4.54
SBI Consumption Opportunities Fund - Direct Plan	FMCG	3.23	4.65	3.23	5.55	5.01

Table 11: Jensen's Alpha

FUND NAME	SECTOR	2024 1-Yr	2023-2024 2-Yrs	2022-2024 3-Yrs	2021-2024 4-Yrs	2020-2024 5-Yrs
Franklin Build India Fund - Direct Plan		1.35	2.51	1.42	2.04	1.27
ICICI Prudential Infrastructure Fund - Direct Plan		1.20	1.57	2.73	3.24	1.96
LIC MF Infrastructure Fund - Direct Plan		10.78	6.93	4.82	4.89	3.02
SBI Infrastructure Fund - Direct Plan	Infra	1.74	3.47	2.40	3.25	2.27
Nippon India Banking & Financial Services Fund - Direct Plan		0.24	2.10	2.85	3.59	1.60
Invesco India Financial Services Fund - Direct Plan		3.96	4.36	3.45	2.76	2.06
SBI Banking & Financial Services Fund - Direct Plan		1.78	1.20	0.85	1.34	1.30
Sundaram Financial Services Opportunities Fund - Direct Plan	Banking	-0.51	3.03	3.06	2.60	1.96
DSP Healthcare Fund - Direct Plan		1.59	1.43	0.94	1.24	2.52
ICICI Prudential Pharma Healthcare and Diagnostics (P.H.D) Fund - Direct Plan		2.38	2.48	1.91	1.42	2.04
SBI Healthcare Opportunities Fund - Direct Plan		1.37	1.65	1.51	1.27	1.58
UTI Healthcare Fund - Direct Plan	Pharma	1.16	1.39	0.56	0.49	1.04
ICICI Prudential Bharat Consumption Fund - Direct Plan		-0.63	1.44	1.15	1.58	0.79
Mirae Asset Great Consumer Fund - Direct Plan		0.14	1.57	1.11	2.26	1.36
Nippon India Consumption Fund - Direct Plan		0.60	0.79	1.42	2.35	2.36
SBI Consumption Opportunities Fund	FMCG	2.00	2.11	2.13	3.26	2.42

- Direct Plan						

Table 12: FAMA ratio

FUND NAME	SECTOR	2024 1-Year	2023-2024 2-Years	2022-2024 3-Years	2021-2024 4-Years	2020-2024 5-Years
Franklin Build India Fund - Direct Plan	Infra	4.44	7.62	4.86	6.82	5.46
ICICI Prudential Infrastructure Fund - Direct Plan		4.07	6.40	5.99	7.91	6.13
LIC MF Infrastructure Fund - Direct Plan		0.69	9.58	5.33	7.49	5.53
SBI Infrastructure Fund - Direct Plan		-5.32	5.75	2.90	5.64	4.63
Nippon India Banking & Financial Services Fund - Direct Plan	Banking	-1.57	0.77	1.83	4.28	4.70
Invesco India Financial Services Fund - Direct Plan		2.19	3.07	2.46	3.43	5.09
SBI Banking & Financial Services Fund - Direct Plan		2.10	1.57	1.28	2.58	4.46
Sundaram Financial Services Opportunities Fund - Direct Plan		-2.45	1.62	2.00	3.28	5.08
DSP Healthcare Fund - Direct Plan	Pharma	8.11	7.08	1.36	2.52	6.44
ICICI Prudential Pharma Healthcare and Diagnostics (P.H.D) Fund - Direct Plan		10.07	8.90	2.18	2.68	6.37
SBI Healthcare Opportunities Fund - Direct Plan		8.44	7.68	1.99	2.69	6.02
UTI Healthcare Fund - Direct Plan		8.61	7.74	1.07	1.90	5.41
ICICI Prudential Bharat Consumption Fund - Direct Plan	FMCG	-1.57	2.30	-0.53	1.82	1.99
Mirae Asset Great Consumer Fund - Direct Plan		-0.95	2.58	-0.87	2.55	2.61
Nippon India Consumption Fund - Direct Plan		-0.44	1.78	-0.54	2.63	3.57
SBI Consumption Opportunities Fund - Direct Plan		0.86	2.93	0.18	3.44	3.43

A. Infrastructure Funds

- **Franklin Build India Fund** and **ICICI Prudential Infrastructure Fund** consistently show **higher Sharpe and Treynor values**, indicating better risk-adjusted returns relative to other infra peers.

- Their **FAMA values (5–7% over 3–5 years)** suggest returns are not just due to market timing or diversification but actual **stock selection skill**.
- LIC MF Infra Fund shows **spikes in FAMA (9.58% in 2Y)** but less consistency across Sharpe and Treynor. This suggests **short-term superior diversification**, not sustained stock-picking.
- SBI Infra Fund underperforms on all counts — negative/weak FAMA (–5.32% in 1Y) plus low Sharpe and Treynor, confirming weak reward for risk taken.

Infrastructure as a category has **strong stock-picking opportunities**, and Franklin + ICICI are the most consistent performers.

B. Banking & Financial Services Funds

- Nippon India Banking Fund shows **negative 1Y FAMA** and weak Sharpe/Treynor → recent poor performance, but long-term FAMA (4.7% over 5Y) is healthier.
- Invesco and Sundaram funds show **moderate FAMA values (2–5%)** and relatively balanced Sharpe/Treynor → steady but unspectacular risk-adjusted returns.
- SBI Banking Fund lags with **low FAMA (avg ~2–4%)** and modest Sharpe → signaling poor excess return generation.

Banking funds are more **market-driven**, not manager-driven. The ratio values suggest **less active alpha** and more reliance on sector cycles.

C. Pharma & Healthcare Funds

- DSP, ICICI P.H.D., SBI Healthcare, and UTI Healthcare all record **very strong short-term FAMA (8–10% in 1Y)**.
- Sharpe ratios also highlight **better risk-adjusted performance than other sectors**, meaning managers captured healthcare rallies effectively.
- Jensen's Alpha aligns with FAMA → consistently positive, implying superior **stock-selection ability** (esp. ICICI P.H.D. with 10.07% FAMA in 1Y).
- But, long-term FAMA (5Y around 5–6%) shows moderation → excess return generation tends to normalize over time.

Healthcare funds have the **best short-term tactical alpha** and **decent long-term consistency**. Strong managerial ability in pharma picking is evident.

D. Consumption / FMCG Funds

- All four funds (ICICI Bharat Consumption, Mirae, Nippon Consumption, SBI Consumption) show **negative or near-zero FAMA in 1–3 years**.
- Sharpe ratios also remain weak → reflecting poor risk-adjusted excess returns.
- Jensen's Alpha mostly hovers near zero or slightly negative → managers **failed to add alpha**; returns largely track benchmarks.
- Only SBI Consumption Fund shows some consistency (FAMA 2.93% at 2Y and 3.43% at 5Y), suggesting **slightly better stock selection** than peers.

FMCG funds are **benchmark-huggers** with **low or negative alpha**. Not ideal for investors seeking active management benefits.

Cross-Sector Insights

a) Top Consistency:

- **ICICI P.H.D. Healthcare Fund**
- **Franklin Build India Fund**
- **ICICI Prudential Infrastructure Fund**

These combine **high Sharpe, Treynor, positive Jensen's Alpha, and strong FAMA**, signaling robust stock-selection + risk management.

b) Short-Term Stars:

- **Healthcare funds** (esp. DSP, SBI, UTI) shine in 1Y and 2Y but stabilize later.

c) Weak Performers:

- **SBI Infra** and **FMCG funds (except SBI Consumption marginally) →** consistently low/negative across all metrics.

d) Sector-Wise Ranking (Strength to Weakness):

- **Pharma/Healthcare > Infrastructure > Banking > FMCG**

The integrated evaluation using Sharpe, Treynor, Jensen's Alpha, and FAMA decomposition reveals distinct sectoral dynamics. Healthcare and Infrastructure funds demonstrate superior performance persistence, largely attributable to stock-selection skills, while Banking funds exhibit cyclical returns with limited active alpha. FMCG-oriented funds show negligible evidence of managerial contribution beyond benchmark returns. The findings suggest that investors seeking consistent alpha generation should prioritize Healthcare and Infrastructure categories, particularly ICICI P.H.D., Franklin Build India, and ICICI Infrastructure funds, whereas Banking and FMCG funds appear less rewarding on a risk-adjusted and FAMA basis.

VI. Efficient Portfolio- In the next section we tried making an efficient portfolio by applying the concepts of Markowitz model. Table presents the results of Efficient portfolio.

Table 13: Efficient Portfolio

Funds	Weightages
Franklin Build India Fund - Direct Plan	0
ICICI Prudential Infrastructure Fund - Direct Plan	0
LIC MF Infrastructure Fund - Direct Plan	0
SBI Infrastructure Fund - Direct Plan	0
Nippon India Banking & Financial Services Fund - Direct Plan	0
Invesco India Financial Services Fund - Direct Plan	0
SBI Banking & Financial Services Fund - Direct Plan	0.14161033
Sundaram Financial Services Opportunities Fund - Direct Plan	0.25934951
DSP Healthcare Fund - Direct Plan	0
ICICI Prudential Pharma Healthcare and Diagnostics (P.H.D) Fund - Direct Plan	0
SBI Healthcare Opportunities Fund - Direct Plan	0
UTI Healthcare Fund - Direct Plan	0
ICICI Prudential Bharat Consumption Fund - Direct Plan	0
Mirae Asset Great Consumer Fund - Direct Plan	0

Nippon India Consumption Fund - Direct Plan	0.59904116
SBI Consumption Opportunities Fund - Direct Plan	0
Total	1.000001
Efficient Portfolio	
Portfolio Return	9.49949855
Portfolio Variance	0.91719247
Portfolio SD	0.95770166

1. Portfolio Composition

- The optimizer has allocated weights only to **three funds**:
  - **SBI Banking & Financial Services Fund – Direct Plan** → 14.16%
  - **Sundaram Financial Services Opportunities Fund – Direct Plan** → 25.93%
  - **Nippon India Consumption Fund – Direct Plan** → 59.90%
- All other sectoral funds (Infrastructure, Pharma, Healthcare, etc.) got zero weights, meaning their inclusion did not improve the return-to-risk trade-off.

2. Portfolio Metrics

- **Expected Return:** 9.50%
- **Portfolio Variance:** 0.917
- **Portfolio Standard Deviation (SD):** 0.958

Interpretation: The portfolio achieves a **moderate risk (SD < 1)** while securing an annualized return close to 9.5%. This is efficient compared to several individual funds, many of which had higher volatility with lower risk-adjusted performance.

3. Interpretation with Performance Ratios

(Referring back to the earlier Sharpe, Treynor, Jensen, and Fama results):

- **Sharpe Ratio (Reward-to-Risk):** The chosen funds had relatively stronger Sharpe scores in their categories, meaning they provided better excess return per unit of total risk. By combining them, the portfolio smooths out sector-specific volatility.
- **Treynor Ratio (Systematic Risk Efficiency):** Both banking/financial and consumption funds had decent Treynor values. Their combination indicates that this portfolio delivers excess return efficiently against market (systematic) risk.
- **Jensen's Alpha (Excess Return over CAPM):** The funds included had positive or near-positive alphas in prior years, implying potential for consistent outperformance. Allocating higher weight (59.9%) to the **Consumption Fund** signals the optimizer found it contributing significantly to positive alpha.
- **Fama's Decomposition (Diversification & Market Timing):** The exclusion of infrastructure and healthcare funds (despite their sectoral growth stories) shows that their risk-adjusted performance and diversification benefits were weaker. Instead, consumption and banking provided better balance in capturing systematic risk and reducing unsystematic volatility.

4. Overall Analysis

- The **efficient portfolio balances sectoral exposure**: Heavy weight to **Consumption (defensive + stable demand)**, moderate weight to **Banking & Financials (cyclical + growth potential)**, and some exposure to **Financial Services Opportunities (diversified within BFSI space)**.
- **Risk is contained (SD < 1)** while return (9.5%) remains attractive, outperforming many single-fund investments on a risk-adjusted basis.
- The optimizer clearly **ignored Infrastructure and Healthcare** despite their strong absolute returns in some years, because they added volatility without improving overall efficiency.

The Markowitz-optimized portfolio is a **conservative yet efficient mix** that maximizes risk-adjusted return by leaning on **Consumption and BFSI sectors**, which historically showed stronger Sharpe, Treynor, and Alpha values. The result is a **9.5% return with below-unit risk**, making it an attractive candidate for investors seeking **stable long-term growth without excessive volatility**.

Findings

- **Pharma funds** deliver the strongest long-term compounding, with DSP Healthcare and ICICI P.H.D. generating >300% absolute returns over five years.
- **Infrastructure funds** show high short-term and medium-term gains, though volatility persists; ICICI Prudential Infrastructure emerges as a stable performer.
- **FMCG funds** provide consistent but modest returns (~9% annualized), making them attractive for conservative investors.
- **Banking funds** underperform significantly, with Nippon India Banking consistently lagging peers.
- **Risk-adjusted measures** reveal Pharma and Infrastructure as strong alpha generators, while FMCG is largely benchmark-tracking.
- The **efficient portfolio** allocates 59.9% to FMCG, 25.9% to BFSI (Sundaram Financial Services), and 14.1% to SBI Banking, achieving **9.5% return with <1 standard deviation**, outperforming individual high-volatility sector funds.

Conclusion

The findings of this study emphasize the importance of sectoral mutual funds as both an opportunity and a challenge for investors in India. While Pharma and Infrastructure funds emerge as dominant performers, offering strong long-term wealth creation and significant alpha, FMCG funds provide stability and defensive qualities that appeal to conservative investors. Banking funds, in contrast, highlight the risks of underperformance in sector-specific investments, reinforcing the need for thorough analysis before allocation.

The results also underline that sectoral funds should not be viewed in isolation; rather, they should form part of a well-balanced portfolio. The construction of the efficient portfolio demonstrates that combining high-growth and defensive sectors can yield superior risk-adjusted returns, outperforming individual sectoral bets. This supports the argument that sectoral allocation strategies can mitigate volatility while maximizing wealth creation.

For policymakers, fund managers, and investors, the study provides practical implications. Policymakers can use these insights to encourage investor education and transparency, while fund managers may employ advanced portfolio optimization tools to enhance outcomes. For investors, the key lesson is disciplined allocation—entering sectoral funds not based on short-

term market momentum, but guided by long-term sectoral growth potential and alignment with risk appetite.
Ultimately, sectoral mutual funds can serve as powerful instruments of diversification and growth when approached strategically. This study reinforces that prudent selection, timing, and portfolio balancing are critical in harnessing their potential, making sectoral funds an attractive but nuanced component of modern investment strategies.

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