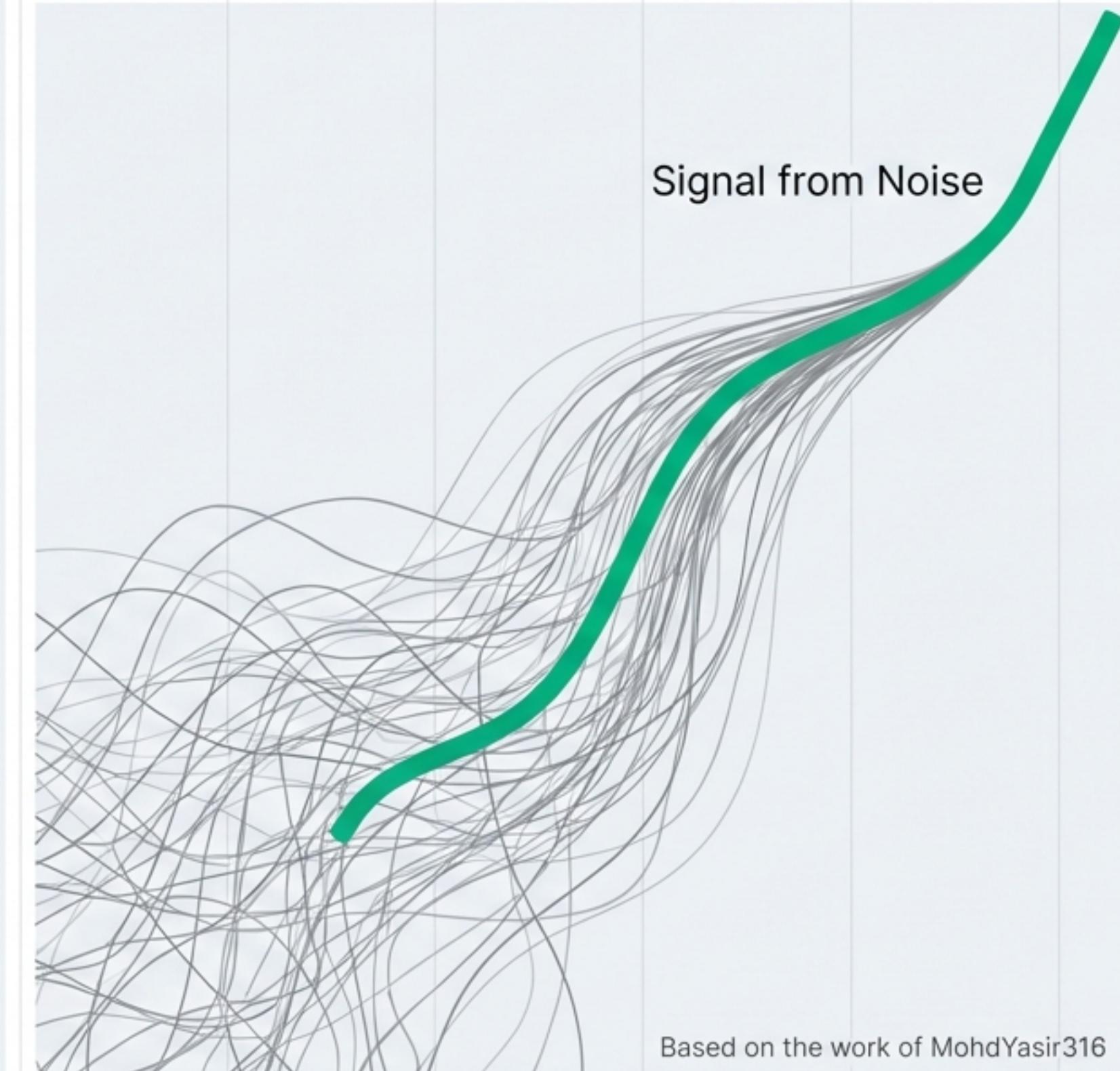


# Decoding Market Performance: A Data-Driven Approach to Mutual Funds

Identifying high-return, low-risk investment opportunities through quantitative analysis and visualization.

## TECH STACK

Python (Pandas/Sklearn) | Excel | Power BI



Based on the work of MohdYasir316

# Executive Summary: Distilling 2,500 Schemes Down to the Top 30



## The Goal

To cut through market saturation by identifying the 'sweet spot' of investing—schemes that offer high returns with minimized risk.



## The Approach

A rigorous three-stage pipeline utilizing Python for statistical scoring, Excel for data validation, and Power BI for interactive storytelling.



## The Outcome

A dynamic dashboard that highlighted winners like Bank of India Mutual Fund (14.4% 1Y Return) and clarified Equity dominance.

# 30

**Top Funds Identified**

# The Challenge of Market Saturation



## Context:

The Indian mutual fund market is dense and noisy. With over 2,500 active schemes, investors face a paradox of choice.



## The Variables:

Wildly varying Expense Ratios, Inconsistent Risk Profiles, Unclear historical data.



## The Pain Point:

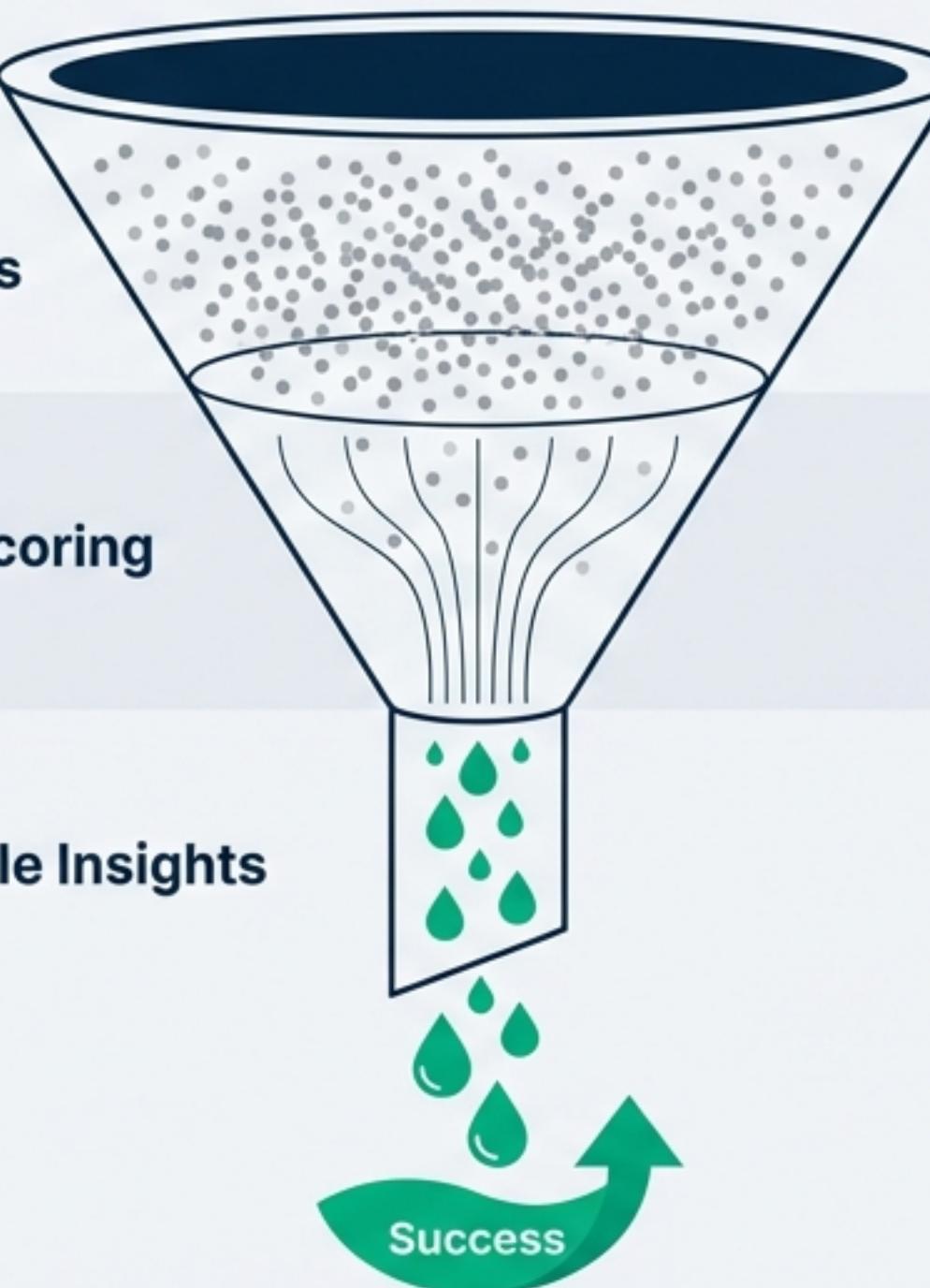
How does an investor separate a consistent performer from a lucky outlier without spending hundreds of hours on manual analysis?

Raw Data:  
>2,500 Schemes

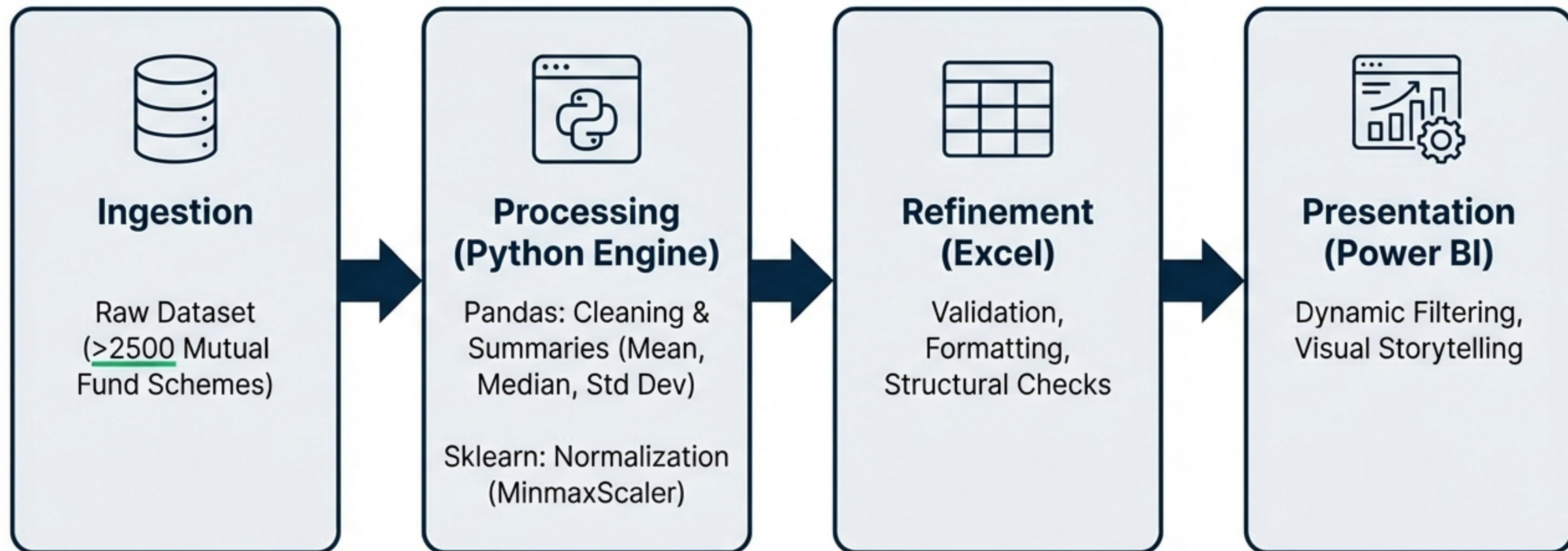
Raw Data: >2,500 Schemes

Filtering & Scoring

Actionable Insights



# Architecture of the Analysis Pipeline



*We treat data processing as a manufacturing line—Raw inputs enter, logic is applied, and strategic intelligence exits.*

# Phase I: Data Cleaning and Statistical Exploration



**Sanitization:** Removed unnecessary columns and handled missing values to ensure dataset integrity.



**Standardization:** Formatted numeric fields (Returns % and Expense Ratios) for consistent calculation.

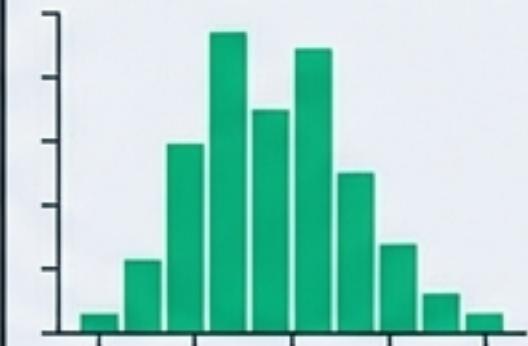


**Exploration:** Utilized Pandas to generate statistical summaries (Mean, Median, Mode) and analyzed fund distributions across Risk Levels and Fund Age.

Data Frame

Scheme Name	Return_3Yr	Exp_Ratio	Risk_Level
...	Null	0.9%	A+
...	14.5%	0.4%	A+
...	14.7%	0.6%	A-
...	10.2%	0.5%	A+
...	14.2%	0.0%	A+
...	10.3%	0.3%	B+

Return\_3Yr Distribution



# Phase II: The Scoring Engine

To rank funds fairly, we standardized disparate metrics using Sklearn's MinMaxScaler. This brings returns and costs onto a common scale.

$$\text{Score} = \left( \begin{array}{c} \text{High} \\ \text{3-Year} \\ \text>Returns \end{array} \right) + \left( \begin{array}{c} \text{Low} \\ \text{Expense} \\ \text{Ratio} \end{array} \right) + \left( \begin{array}{c} \text{Moderate} \\ \text{Fund Age} \end{array} \right) + \left( \begin{array}{c} \text{Positive} \\ \text{Momentum} \end{array} \right) =$$

Prioritizing **long-term stability**      **Minimizing fees**      Balancing track record with agility      **Consistent 1-Year Return > 0**

Key Takeaway: This algorithmic scoring removes human bias, leaving only the statistically superior funds.

# The Interactive Intelligence Hub

The screenshot displays a Power BI dashboard titled "Power BI Dashboard". On the left, there is a sidebar with dynamic filters for "Fund Type" (Equity selected), "Category" (Large Cap, Mid Cap, Small Cap), "AMC Name" (dropdown menu showing SBI, HOFC, Gemsoate..., Other...), and "Risk Level" (Low, Moderate selected, High). The main area shows "Total Investment" at ₹5.2 Trillion (+8.5%) and "SIP Trends" at ₹15,000 Cr/Month (+12.5%). Below these are two cards: "Top 30 Funds" (a table) and two "Insight Cards" (Equity funds trending up and Debt funds stable).

**KPI Cards:** Instant visualization of AUM and SIP.

**Dynamic Filters:** User-controlled sorting.

**Insight Cards:** Auto-generated explanations for non-experts.

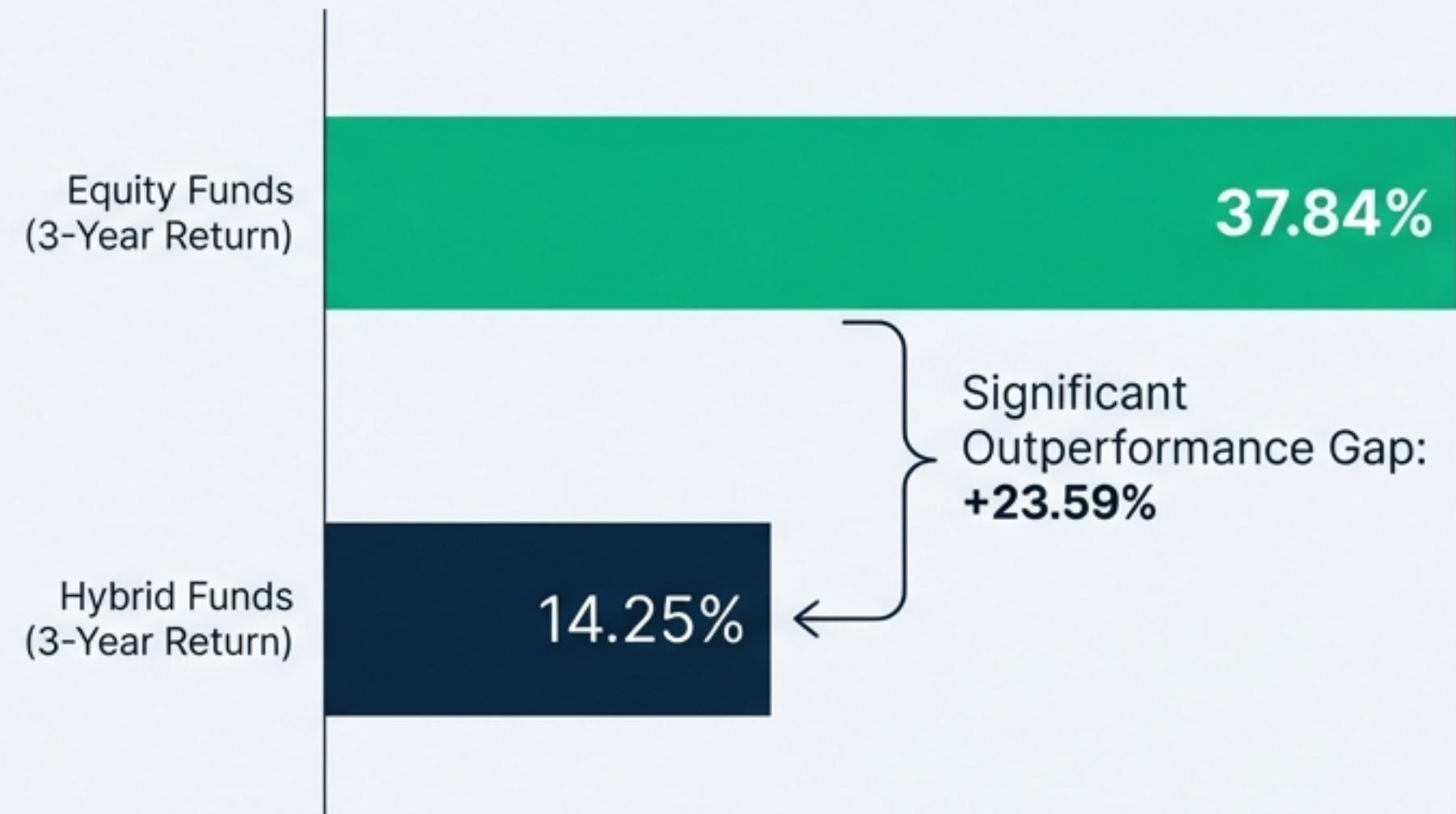
Fund Name	3-year CAGR	Expense Ratio
Aditya Birla Sun Life Frontline Equity Fund	14.8% CAGR	0.5% Exp Ratio
Mirae Asset Emerging Bluechip Fund	18.2% CAGR	0.6% Exp Ratio
SBI Focused Equity Fund	16.5% CAGR	0.7% Exp Ratio
SBI Focused Equity Fund	16.5% CAGR	0.7% Exp Ratio
Aditya Birla Sun Life Equity Fund	14.2% CAGR	0.7% Exp Ratio
Aditya Birla Sun Life Equity Fund	14.3% CAGR	0.7% Exp Ratio
Mirae Asset Emerging Bluechip Fund	18.2% CAGR	0.8% Exp Ratio
SBI Focused Equity Fund	10.5% CAGR	0.7% Exp Ratio
Mirae Asset Emerging Bluechip Fund	9.5% CAGR	0.6% Exp Ratio
SBI Focused Equity Fund	9.5% CAGR	0.7% Exp Ratio
Aditya Birla Sun Life Equity Fund	8.5% CAGR	0.7% Exp Ratio
Mirae Asset Emerging Bluechip Fund	8.5% CAGR	0.7% Exp Ratio
Mirae Asset Emerging Fund	9.3% CAGR	0.7% Exp Ratio
SBI Focused Equity Fund	8.5% CAGR	0.8% Exp Ratio

# Insight: The Dominance of Equity

**Market Leader:** Equity Funds command the highest volume with ₹1.35M Cr in total asset size.

**Strategic Implication:** While riskier, Equity funds statistically remain the primary driver for significant long-term wealth creation compared to Hybrid or Debt options.

## 3-Year Return Comparison



# Insight: Efficiency and Expense Ratios

## The Logic



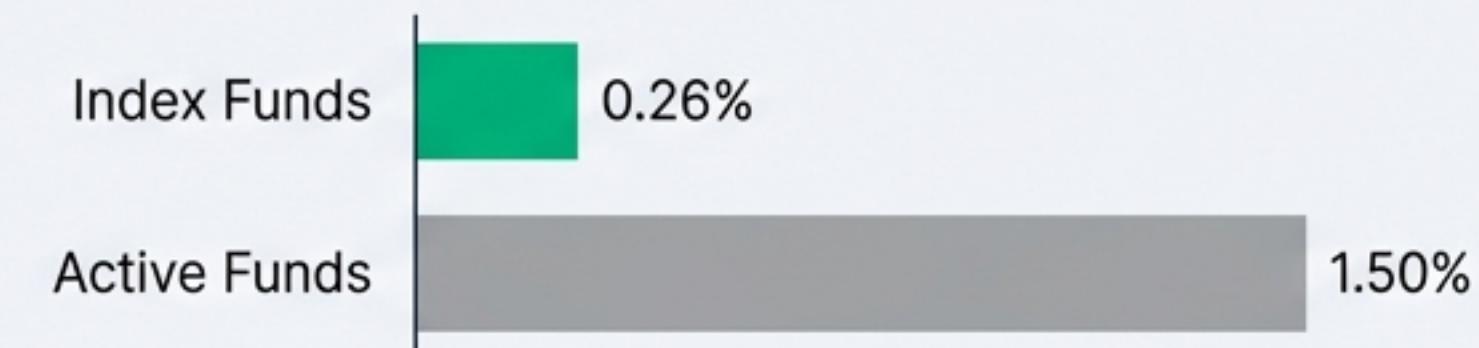
The Expense Ratio represents the annual fee charged to manage the fund. Lower ratios compound into higher net returns over decades.

By minimizing management costs, Index Funds offer a predictable, low-friction entry point.

## The Winner

**0.26%**

Lowest Average Expense Ratio (Index Funds)



# Insight: The Titans of Management

Identifying managers who successfully handle massive portfolios helps filter for stability.



## Vivek Sharma

Top Fund Manager

**₹7.3M Cr**

Assets Under Management

Highest AUM

Large Assets Under Management (AUM) indicate market trust and institutional stability. This metric serves as a proxy for fund reliability in volatile markets.

# Tactical Entry: SIP vs. Lumpsum

## Systematic Investment Plan (SIP)



**Avg SIP:  
₹528.50/month**

High accessibility. Low barrier to entry allows for consistent compounding.

## Performance Spotlight



**Bank of India  
Mutual Fund:  
14.4% (1Y Return)**

Identified as a breakout performer. Lumpsum minimum entry threshold tracked at ~₹3.05K.

# The Power of Informed Investment

By combining Python's filtering power, Excel's precision, and Power BI BI's storytelling, we transform raw numbers into a roadmap for financial freedom. This project proves that low-risk, high-reward decisions are not a matter of luck, but of proper filtering.

*“Early and informed mutual fund investment leads to long-term wealth creation. This dashboard empowers users to take control of that future.”*

# Future Scope & Collaboration

## Roadmap

- ↳ Integration of live API data feeds for real-time analysis.
- ↳ Machine Learning models for predictive forecasting of NAV.
- ↳ Expanded sentiment analysis from market news.

## Connect

Your feedback helps grow and build better data-driven solutions.



Developer: MohdYasir316  
Platform: GitHub / LinkedIn

Let's connect and discuss ideas.