

# DOCUMENTATION

## FINAL PROJECT REPORT: Mutual Fund Market Intelligence

**Sector:** Financial Services / Asset Management

**Team Name:** Section E - Group 3

### 1. Cover Page

- **Project Title:** Mutual Fund Market Intelligence & AMC Performance Dashboard
- **Sector:** Financial Services (Wealth Management)
- **Team Members:** Ranajeet Roy (Lead), Yatin Singh, Pratham Malhotra, Ved Pawar, Abhijeet Kumar, Pushkar Jain.
- **Institute:** Newton School of Technology

### 2. Executive Summary

This report details the transformation of "India's Ultimate Mutual Fund Dataset" into a strategic decision-making tool. By addressing a "messy" data environment of 16,000+ schemes, our team engineered a dashboard to identify market leaders by AUM and evaluate accessibility. Key findings highlight a high market concentration among legacy AMCs and a significant retail preference for liquid, low-barrier equity schemes.

### 3. Sector & Business Context

The Indian Mutual Fund industry is characterized by high complexity. With thousands of schemes across Equity, Debt, and Hybrid categories, investors face "Analysis Paralysis." We chose this sector to provide transparency in how Asset Management Companies (AMCs) manage capital and how accessible these investments are to the common retail investor.

### 4. Problem Statement & Objective

**Formal Definition:** "Which mutual funds and Asset Management Companies (AMCs) should investors focus on based on assets managed, fund categories, accessibility, and overall market presence?"

- **Project Scope:** Comprehensive analysis of all AMCs listed in the provided CSV.
- **Success Criteria:** Development of an interactive Google Sheets dashboard that reduces fund comparison time by 80%.

## 5. Data Description

- **Source Citation:** India's Ultimate Mutual Fund Dataset (`mutual_fund_data.csv`).
- **Data Structure:** 16 columns including `AMC`, `Scheme_Category`, `NAV`, `Average_AUM_Cr`, and `Scheme_Min_Amt`.
- **Data Size:** 16,319 records.
- **Limitations:** The dataset is a point-in-time snapshot and does not account for real-time daily NAV fluctuations.

## 6. Methodology (Data Source + Cleaning Steps)

All engineering was conducted in Google Sheets per capstone requirements:

- **Cleaning Scheme\_Min\_Amt:** Removed non-numeric strings (e.g., "Rs. 5000 and multiples...") to create a filterable numeric column.
- **Handling Nulls:** Identified and addressed missing values in `Average_AUM_Cr` to prevent skewed averages.
- **Standardization:** Converted `Launch_Date` into uniform Date objects for age analysis.
- **Feature Engineering:** Created "Fund Age Groups" and "NAV Buckets" for categorical segmentation.
- **Assumptions:** Assumed that schemes with null AUM were either recently launched or inactive during the reporting quarter.

## 7. KPI & Metric Framework

- **Total AUM (Cr):** Sum of assets to measure market power.
- **Average NAV:** Pricing level comparison across AMCs.
- **Scheme Count:** Variety of options offered by an AMC.
- **Avg. Min Investment:** Metric for retail accessibility.

## 8. Exploratory Data Analysis (EDA)

- **Trend:** A surge in Open-Ended Equity schemes in recent years.
- **Distribution:** `Scheme_Min_Amt` is heavily clustered around ₹500 - ₹5,000.
- **Comparison:** Legacy AMCs hold 3x more AUM on average compared to AMCs younger than 5 years.

## 9. Advanced Analysis

- **Segmentation:** Grouped AMCs into "Tier 1" and "Tier 2" based on total asset control.
- **Risk Profiling:** Analysis of NAV variance within the "Debt Scheme" vs "Equity Scheme" categories.

## 10. Dashboard Design

- **Objective:** To answer the core business question through interactive filtering.
- **View Structure:** KPI tiles, AUM Bar Charts, and Category Donut Charts.
- **Filters:** AMC Name, Scheme Type, Category, and Fund Age Group.

## 11. Analytical Insights (The "Meat")

1. **Market Concentration:** The top 5 AMCs (Aditya Birla, HDFC, Mirae, etc.) control over 40% of the total recorded AUM.
2. **Asset Class Preference:** Equity schemes dominate the market by volume, representing high retail interest.
3. **Liquidity:** Open-ended schemes comprise over 90% of the market, showing investor preference for liquidity.
4. **Accessibility:** 60% of schemes have entry points under ₹5,000, confirming a shift toward mass-market retail participation.
5. **Maturity Advantage:** "Legacy" funds (15+ years) consistently maintain higher AUM stability compared to new launches.

## 12. Recommendations (The "Value")

1. **For Retail Investors:** Focus on Equity schemes with high AUM-to-Scheme counts to ensure fund house stability.
2. **For AMCs:** Launch "Hybrid" products with lower minimum thresholds (₹500) to capture the Gen-Z segment.
3. **For Advisors:** Use the "Fund Age" filter to recommend seasoned funds for conservative, low-risk clients.

## 13. Impact Estimation

- **Efficiency:** Automated Pivot Tables reduce research time from hours to seconds.
- **Risk Reduction:** Categorical filtering prevents "bad-fit" investments by highlighting AUM/NAV outliers.

## 14. Limitations

- **Data Gaps:** Approximately 50% of schemes lacked recent AUM data.
- **Dynamic Pricing:** Real-time market volatility is not reflected in this static dataset.

## 15. Future Scope

- **Forecasting:** Adding historical NAV trends to predict future growth.
- **Integration:** Linking real-time APIs for live dashboard updates.

## 16. Conclusion

This project successfully transformed a raw CSV into a professional intelligence tool. We have demonstrated that while the mutual fund market is vast, data-driven filtering can simplify selection and highlight the dominance of established AMCs.

## 17. Appendix

- **Data Dictionary:** Mapping of headers (Scheme\_Code, ISIN, AMC).
- **Regex Logic:** Used for cleaning the Scheme\_Min\_Amt strings.

## 18. Contribution Matrix (Who did what)

Team Member	Dataset	Cleaning	Analysis	Dashboard	Report	Overall Role
Ranajee t Roy	✓				✓	Project Lead
Yatin Singh			✓		✓	Strategy Lead (Value)
Pratham Malhotr a		✓				Data Lead (Methodology )
Abhijeet Kumar			✓			Analytics Lead (Meat)
Ved Pawar				✓		Dashboard Lead
Pushkar Jain					✓	Quality Lead (Report)

**Declaration:** We confirm that these contributions are accurate and verifiable through Google Sheets version history.

#### Team Signature Block:

Ranajeet Roy | Yatin Singh | Pratham Malhotra | Ved Pawar | Abhijeet Kumar | Pushkar Jain