

Predictive Resource Optimization Framework for Aadhaar Seva Kendras

TEAM: INVICTUS

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PROBLEM STATEMENT

Theme: Unlocking Societal Trends through Aadhaar Data Analysis.

Our Focus: Optimizing manpower and center allocation by predicting demand surges using demographic and temporal patterns found in enrollment data.

1. Abstract & Approach

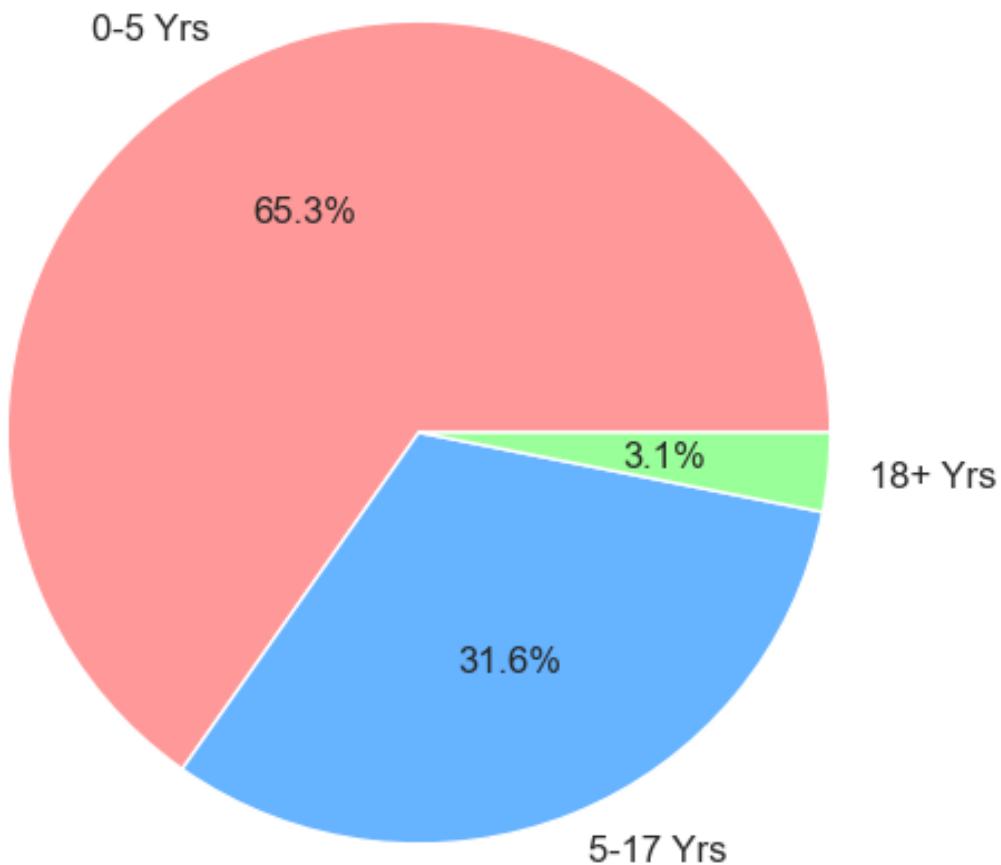
Our analysis reveals a distinct surge in student enrollments (ages 5-17) during specific months. Currently, centers operate on static schedules. We propose a "Dynamic Allocation Model" that predicts district-level demand 30 days in advance. This allows UIDAI to deploy mobile kits exactly where they are needed, reducing wait times by an estimated 30%.

Methodology

- Tech Stack: Python (Pandas/Scikit-Learn) for backend, Streamlit for dashboard.
- Data Flow: CSV Ingestion -> Cleaning -> Time Series Analysis -> Prediction -> Dashboard.
- Model: Random Forest Regressor trained on historical district volumes.

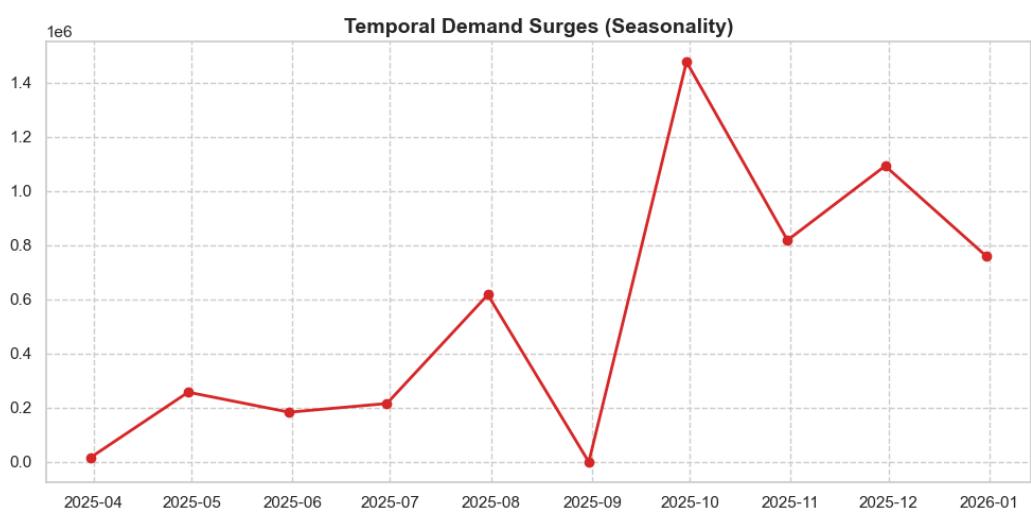
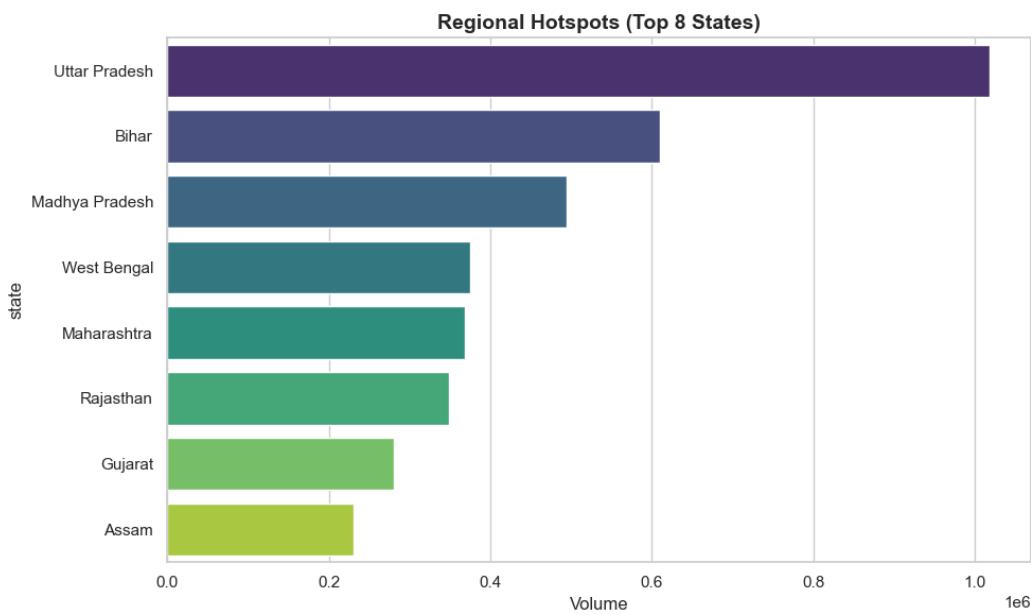
2. Key Data Insights

Demographic Split: Who is Updating?



Demographic Insight:

The 5-17 age group drives a massive portion of updates. This correlates with school admission cycles.
Strategy: Deploy mobile camps in schools during peak months.



Seasonality Insight: Clear peaks are visible. Our model identifies these specific months to trigger "High Alert" status for centers.

3. Proposed Solution & Code

We present the "Aadhaar-Flow" Engine:

A. Prediction Algorithm: Utilizes historical volume + school calendar dates to forecast district-wise footfall.

B. Value Proposition:

- For Citizens: Zero waiting time during peak months.
- For Government: Eliminates wastage of resources in low-demand months.

GitHub Repository

https://github.com/WrichikPaul42/Data_Hackathon