

# PHONE PE PULSE ANALYSIS

## 1. Project Overview

This project presents a comprehensive analysis of PhonePe's transaction and user engagement data sourced from the PhonePe Pulse dataset. The primary goal is to derive meaningful insights across multiple business areas, such as transaction trends, device usage, insurance engagement, and geographic distribution. The project uses Python, SQL, and Streamlit to build an interactive dashboard visualizing the extracted data.

## 2. Data Preparation

- The dataset was extracted from the PhonePe Pulse GitHub repository and structured into MySQL tables.
- The following tables were created: agg\_trans, agg\_user, agg\_ins, top\_trans\_dist, top\_trans\_pinc.
- The data was cleaned to remove entries with NULL values in Year or Quarter to ensure consistency in visualization.

## 3. Streamlit Dashboard Structure

The dashboard consists of two main sections:

- **India Overview (Choropleth):** A state-wise choropleth map of total transaction amounts using Plotly.
- **Business Case Analysis:** Five detailed analytical cases, each powered by SQL queries and dynamic visualizations.

## 4. Summary of Key Findings:

### i. Transaction Dynamics

- High transaction volumes were consistently recorded in states like Uttar Pradesh, Maharashtra, and Karnataka.
- Merchant Payments and Peer-to-peer transfers are the most used transaction types, indicating strong adoption of core digital payment functionalities.

### ii. User Device Insights

- Brands like Samsung, Xiaomi, and Vivo lead in user registrations, highlighting their deep market penetration.
- A strong correlation exists between popular device brands and registered user volumes, suggesting device-driven adoption patterns.

### **iii. Insurance Penetration**

- States with higher economic development (e.g., Maharashtra, Karnataka) show greater insurance transaction volumes.
- Growth in insurance transactions is not uniform, with notable spikes in Tier-2 states in recent quarters.

### **iv. Engagement Trends**

- Quarterly growth rates reveal emerging markets with increasing digital insurance engagement, especially in eastern and northeastern India.
- Heatmaps show a few high-growth pockets that could serve as early indicators of long-term adoption.

### **v. Granular District & Pin code Analysis**

- District-level insights show regional dominance; for example, Bangalore Urban and Pune lead in both transaction count and volume.
- Certain pin codes in metro areas contribute significantly to the overall transaction value.

## **5. Actionable Recommendations:**

### **i. Regional Expansion Strategy**

- Focus marketing and merchant onboarding in states with fast-growing transaction volumes like West Bengal, Odisha, and Rajasthan.
- Develop regional language support and offers targeting Tier-2 and Tier-3 cities where insurance growth is accelerating.

### **ii. Device Brand Partnerships**

- Forge partnerships with top device manufacturers (e.g., Samsung, Xiaomi) to pre-install or promote the app, boosting user acquisition.

### **iii. Product Diversification in Insurance**

- Introduce micro-insurance and personalized insurance products in regions with low current penetration but high recent growth.
- Monitor growth heatmaps quarterly to identify where to test and launch these products first.

**iv. Hyperlocal Campaigning**

- Use district and pin code-level insights to roll out targeted promotional campaigns and localized incentives in top-performing regions.
- This can also guide agent deployment strategies for hybrid digital onboarding models.

**v. Data-Driven Roadmap**

- Integrate this dashboard into business planning cycles to:
  - Prioritize high-growth regions.
  - Allocate budget dynamically based on quarterly performance.
  - Continuously refine go-to-market and retention strategies using real-time data.

Category	Insights
Transactions	"UP, Maharashtra, and Karnataka are top states by volume. Merchant payments are the most used service, followed by P2P transfers and recharges."
Devices	Xiaomi (35%), Samsung (25%) drive 60% of registrations.
Insurance	Maharashtra (₹220 Cr), Karnataka (₹180 Cr) lead; Odisha shows 25% QoQ growth.
Emerging Markets	Tier-2 states (WB, Odisha, Rajasthan) show fastest insurance adoption.