PHONEPE DATA ANALYSIS
INSIGHTS & RECOMMENDATIONS

BY,
JANANI DEVARAJAN

AGENDA

PROJECT OVERVIEW

- This project involves a comprehensive analysis of PhonePe transaction, Insurance and user data to provide actionable insights for market expansion, user engagement, and growth strategies. The analysis covers state, district, and pin code levels to identify trends, high-performing regions, and opportunities in various domains such as transactions, user registrations, and insurance activities.

TOOLS & DATA

TOOLS	DATA
🐍 Python 🗄 MySQL 📊 Streamlit ☐ Pandas 📈 Plotly	PhonePe Pulse GitHub Repository : https://github.com/PhonePe/pulse/tree/master/data

WORKFLOW DIAGRAM

Data Extraction → Cleaning → Storage (MySQL) → Analysis → Visualization → Insights & Recommendations.

ANALYSIS

➢ **Transaction Analysis for Market Expansion**

➢ **User Engagement and Growth Strategy**

➢ **Transaction Analysis Across States and Districts**

➢ **User Registration Analysis**

➢ **Insurance Transactions Analysis**

TRANSACTION ANALYSIS FOR MARKET EXPANSION

➢**Karnataka, Maharashtra, and Telangana** consistently record the **highest transaction amounts** among all states.

➢**Merchant payments** and **peer-to-peer (P2P) transactions** are the **most dominant transaction types** across the country.

➢**Peer-to-peer transactions** show strong popularity and usage trends in **all states,** indicating widespread adoption.

➢Across the years **2018 to 2024,** the **fourth quarter (Q4)** consistently shows the **highest transaction volumes,** likely due to increased spending during the festive season.

USER ENGAGEMENT AND GROWTH STRATEGY

➢ **Maharashtra, Uttar Pradesh, and Karnataka** consistently record the **highest number of user registrations** across all quarters from **2018 to 2024.**

➢ The **fourth quarter (Q4)** shows the **peak user registration activity** across all states and throughout the years **2018 to 2024,** indicating strong year-end growth momentum.

TRANSACTION ANALYSIS ACROSS STATES AND DISTRICTS

➤ **Top 10 States by Transaction Amount:**
Telangana, Karnataka, Maharashtra, Rajasthan, Andhra Pradesh, Delhi, Madhya Pradesh, Uttar Pradesh, Bihar, and West Bengal recorded the **highest overall transaction amounts**.

➤ **Top 10 States by Transaction Count:**
Telangana, Karnataka, Maharashtra, Rajasthan, Delhi, Madhya Pradesh, Uttar Pradesh, Andhra Pradesh, Haryana, and Bihar registered the **highest number of transactions** across the country.

➤ **Bottom 10 States by Transaction Amount:**
Lakshadweep, Ladakh, Andaman & Nicobar Islands, Mizoram, Chandigarh, Sikkim, Tripura, Dadra & Nagar Haveli & Daman & Diu, Puducherry, and Goa reported the **lowest transaction amounts**, indicating relatively lower digital payment activity in these regions.

USER REGISTRATION ANALYSIS

➢ **Top 10 States by User Registration Count:**
Maharashtra, Karnataka, Delhi, Uttar Pradesh, Telangana, Rajasthan, Haryana, Andhra Pradesh, Gujarat, and Madhya Pradesh recorded the **highest number of user registrations** across all quarters.

➢ The **fourth quarter (Q4)** consistently shows the **highest user registration activity** from **2018 to 2024**, reflecting strong growth trends toward the end of each year.

➢ **Bottom 10 States by User Registration Count:**
Lakshadweep, Ladakh, Andaman & Nicobar Islands, Mizoram, Sikkim, Chandigarh, Goa, Meghalaya, Puducherry, and Dadra & Nagar Haveli & Daman & Diu reported **lower registration numbers**, indicating limited user adoption in these regions.

INSURANCE TRANSACTIONS ANALYSIS

➤ **Top 10 States by Insurance Transaction Amount:**
Karnataka, Maharashtra, Telangana, Uttar Pradesh, Delhi, Haryana, Tamil Nadu, Rajasthan, Kerala, and West Bengal recorded the **highest insurance transaction amounts** across all years.

➤ **Top 10 States by Insurance Transaction Count:**
Karnataka, Maharashtra, Delhi, Telangana, Uttar Pradesh, Haryana, Tamil Nadu, Rajasthan, Andhra Pradesh, and West Bengal reported the **highest number of insurance transactions.**

➤ **Karnataka** ranks as the **leading state in India** with the **highest insurance transaction amount and count** consistently from **2020 to 2024**, indicating strong user adoption in the insurance sector.

➤ **Bottom 10 States by Insurance Transaction Amount:**
Lakshadweep, Ladakh, Mizoram, Manipur, Sikkim, Chandigarh, Andaman & Nicobar Islands, Dadra & Nagar Haveli & Daman & Diu, Nagaland, and Meghalaya showed **minimal insurance transaction activity,** suggesting lower market penetration in these regions.

INSIGHTS AND RECOMMENDATIONS

📊 1. TRANSACTION ANALYSIS FOR MARKET EXPANSION

💡 Insights

➢ **Karnataka, Maharashtra, and Telangana show consistently high transaction amounts, indicating strong digital payment adoption.**

➢ **Merchant and peer-to-peer (P2P) payments dominate all transaction types, showing a balanced ecosystem of business and personal use.**

➢ **P2P transactions remain the most popular across all states.**

➢ **Q4 (Oct–Dec) records the highest transaction values each year (2018–2024), likely due to festive and shopping seasons.**

🚀 Recommendations

➢ **Focus marketing and merchant acquisition efforts in high-performing states to consolidate market leadership.**

➢ **Target emerging Tier-2 and Tier-3 cities for expansion, leveraging existing P2P transaction strength.**

➢ **Launch festive or seasonal cashback offers in Q4 to maximize engagement during high-transaction periods.**

➢ **Introduce regionalized business payment solutions to attract small and medium merchants.**

👥 2. USER ENGAGEMENT AND GROWTH STRATEGY

💡 Insights

➢ **Maharashtra, Uttar Pradesh, and Karnataka record the highest user registrations across all quarters from 2018–2024.**

➢ **Q4 consistently drives user growth, indicating increased adoption toward the year-end.**

➢ **There is a positive correlation between user registration and app engagement metrics (e.g., app opens, transaction count).**

🚀 Recommendations

➢ **Strengthen regional marketing campaigns in high-user states to deepen engagement.**

➢ **Focus user acquisition campaigns in underperforming northern and northeastern states.**

➢ **Launch referral programs and gamified engagement features (e.g., badges, rewards) to retain users.**

➢ **Personalize in-app experiences using user activity data to drive frequent usage.**

☐ 3. TRANSACTION ANALYSIS ACROSS STATES AND DISTRICTS

💡 Insights

➢ **Telangana, Karnataka, and Maharashtra are the top states both in transaction amount and count.**

➢ **Smaller Union Territories and North-Eastern states show minimal digital transaction activity.**

➢ **Major metropolitan regions drive the bulk of transaction volumes, showing urban market dominance.**

🚀 Recommendations

➢ **Develop localized awareness programs to boost digital payment adoption in low-performing regions.**

➢ **Partner with state governments and local businesses to promote PhonePe as a preferred payment mode.**

➢ **Introduce incentives for merchants in smaller towns to expand PhonePe's acceptance base.**

➢ **Enhance infrastructure support for rural digital payments, ensuring seamless transaction experiences.**

☐ 4. USER REGISTRATION ANALYSIS

💡 Insights

➢ **Maharashtra, Karnataka, and Delhi lead in user registration volumes, followed by other high-population states.**

➢ **Q4 (Oct–Dec) shows the highest registration counts from 2018 to 2024.**

➢ **Smaller states and UTs such as Lakshadweep, Ladakh, and Mizoram record lower registration numbers, indicating limited adoption.**

🚀 Recommendations

➢ **Focus user acquisition campaigns in less-penetrated states through regional languages and influencer marketing.**

➢ **Encourage new registrations during Q4 campaigns with festive sign-up bonuses.**

➢ **Partner with telecom providers or local fintechs to boost registrations in remote regions.**

➢ **Simplify onboarding and KYC processes to make user sign-up faster and more accessible.**

5. INSURANCE TRANSACTIONS ANALYSIS

💡 Insights

➢ **Karnataka, Maharashtra, and Telangana top both in insurance transaction amount and count.**

➢ **Southern and metropolitan states show strong digital insurance adoption.**

➢ **Post-2020, insurance transaction activity surged, indicating higher awareness and trust in digital financial services.**

➢ **North-Eastern and smaller Union Territories have low insurance participation.**

🚀 Recommendations

➢ **Expand insurance awareness initiatives in low-performing states through targeted education campaigns.**

➢ **Partner with local insurance providers to introduce micro-insurance and region-specific plans.**

➢ **Offer discounts, rewards, or bundled plans to promote in-app insurance adoption.**

➢ **Use data-driven targeting to recommend personalized insurance products based on user behaviour.**

CONCLUSION

➢ The analysis of **PhonePe Pulse data (2018–2024)** reveals strong digital payment adoption and user growth across major Indian states, particularly in **Karnataka, Maharashtra, and Telangana.**

➢ **Q4 consistently shows peak performance** in both transactions and user registrations, aligning with festive and shopping seasons.

➢ **Peer-to-peer and merchant payments** dominate transaction types, showing balanced growth in personal and business use.

➢ **Southern and metropolitan regions** drive the majority of digital and insurance transactions, while smaller states and UTs show untapped potential.

➢ Insights from user engagement and transaction patterns indicate that **targeted regional strategies, localized marketing**, and **data-driven personalization** can significantly enhance market expansion and financial inclusion.

✴ Final Takeaway

"Data-driven insights empower PhonePe to identify growth opportunities, strengthen its regional presence, and enhance user engagement — paving the way for a more inclusive and digitally connected India."

Thank You!

Analysis and Visualization ,

by

Janani Devarajan