PhonePe Data Analysis Using Power BI

Detailed Project Report

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1. Introduction

The rapid growth of digital payment systems has significantly changed the financial ecosystem in India. Applications such as PhonePe have made transactions faster, more convenient, and accessible to a wide range of users. PhonePe provides multiple services including UPI payments, insurance, loans, recharges & bill payments, and money transfers, generating a massive volume of transactional data every day.

Analyzing this data is essential for understanding customer behavior, identifying transaction patterns, monitoring system performance, and improving user experience. Business Intelligence tools like Power BI play a crucial role in transforming raw transactional data into meaningful insights through interactive dashboards and visual storytelling.

This project presents an **end-to-end PhonePe data analysis solution using Power BI**, focusing on creating a **five-page interactive dashboard**. The dashboard summarizes transaction performance, failed payments, and service-wise insights. The project is designed not only to provide analytical insights but also to help learners strengthen their practical knowledge of **data cleaning, visualization, dashboard design, and interactivity**, making it a valuable addition to a professional resume.

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2. Problem Statement

Despite the availability of large volumes of transaction data, raw data alone does not provide meaningful insights. Digital payment platforms face challenges such as:

- Identifying reasons for transaction failures
- Monitoring service-wise performance
- Understanding user preferences across different services
- Presenting insights in a clear and interactive manner

Without proper visualization and analysis, it becomes difficult for stakeholders to make informed decisions. This project addresses these challenges by developing a structured Power BI dashboard that enables efficient analysis of PhonePe transaction data.

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3. Project Objectives

The key objectives of this project are:

- To analyze PhonePe transaction data across multiple services
- To monitor total transactions, transaction amounts, and payment statuses
- To identify and categorize failed transactions and their reasons
- To design an interactive, multi-page Power BI dashboard
- To apply best practices in data validation and visualization
- To enhance understanding of Power BI features such as slicers, cards, buttons, and navigation
- To build a professional analytics project suitable for resumes, internships, and job applications

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4. Dataset Overview

The dataset used in this project consists of structured transaction-level data related to PhonePe services. It contains the following attributes:

- Transaction ID
- User ID
- Transaction amount
- Transaction date
- Payment status (Successful / Failed)
- Failure reason (if applicable)
- Service category (Insurance, Loans, Recharges, Bills, Money Transfers)
- Subcategories such as insurance types and loan types

To ensure accessibility for learners with limited system configurations, the project supports working with **smaller datasets**. This approach allows students to perform analysis even on low-end systems without compromising learning outcomes.

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5. Tools and Technologies Used

The tools used in this project include:

- **Power BI Desktop** – For data modeling, visualization, and dashboard creation
- **Excel / CSV Files** – For storing and organizing raw transaction data
- **Icons and Visual Assets** – For improving dashboard design and branding
- **External Blog Resources** – For datasets and icons required to replicate the project

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6. Data Cleaning and Preparation

Before building visualizations, the dataset undergoes data cleaning and validation. This step ensures accuracy and reliability of insights. The following activities are performed:

- Verification of data types for transaction amounts and dates
- Validation of payment status values
- Removal or correction of inconsistent records
- Cross-checking transaction IDs and user IDs
- Filtering data based on service type and payment status

Accurate data preparation is critical, as incorrect data can lead to misleading insights and incorrect business decisions.

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7. Dashboard Architecture and Design

The Power BI dashboard is designed as a **five-page interactive report**, each page focusing on a specific analytical perspective. Consistent layout, branding, and color themes are used throughout the dashboard to maintain a professional appearance.

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8. Dashboard Pages and Analysis

8.1 Home Page – Overall Summary

The Home page provides a high-level summary of the entire dataset. It includes:

- Total number of transactions
- Total transaction amount
- Total failed payments
- Date range slicers for customized analysis

This page acts as the entry point for users, enabling quick assessment of overall performance and easy navigation to detailed service-level dashboards.

8.2 Failed Transactions Analysis

Failed transactions are a major focus of this project, as they directly impact user satisfaction. This section includes:

- Total count of failed transactions
- Categorization of failure reasons such as insufficient balance and server issues
- Pie charts to show distribution of failure reasons
- Line graphs to analyze failure trends over time

By identifying common failure reasons, businesses can take corrective actions to improve system reliability and customer trust.

8.3 Insurance Transactions Dashboard

The Insurance dashboard focuses exclusively on insurance-related transactions. Key components include:

- Filters to isolate insurance transactions
- Analysis of insurance types such as bike, car, and health insurance
- Comparison of successful and failed insurance payments
- Time-based analysis using date slicers

Customized color schemes and legends improve clarity and help users easily interpret insurance performance.

8.4 Loan Transactions Dashboard

This page analyzes loan-related transactions and includes:

- Loan transaction amounts and counts
- Payment status comparison
- Service-wise and category-wise analysis

The project demonstrates reusability of dashboard structure, where only icons and labels are changed while maintaining the same analytical framework.

8.5 Recharges, Bills, and Money Transfers

This section covers other PhonePe services such as:

- Mobile recharges
- Utility bill payments
- Money transfers

Bar charts and slicers allow users to compare transaction amounts across services and analyze customer preferences.

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9. Visualization Techniques Used

The dashboard uses multiple Power BI visuals including:

- KPI cards for key metrics
- Pie charts for proportional analysis
- Line charts for trend analysis
- Bar charts for service comparison
- Slicers for interactive filtering

Proper formatting, font selection, and spacing enhance readability and usability.

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10. Navigation and Interactivity

To improve user experience, the dashboard includes:

- Navigation buttons for multi-page movement
- Grouped elements for organized layout
- Color-changing buttons to indicate selected services
- Dynamic slicers for real-time filtering

These features make the dashboard interactive and intuitive for end-users.

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11. Key Insights and Business Value

The dashboard provides valuable insights such as:

- Identification of high-performing services
- Detection of frequent failure reasons
- Understanding user transaction behavior
- Opportunities to improve service reliability

These insights can support data-driven decision-making for digital payment platforms.

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12. Learning Outcomes

Through this project, the following skills are developed:

- End-to-end Power BI dashboard development
- Data validation and cleaning techniques
- Analytical thinking and business interpretation
- Visual storytelling and UI design
- Practical experience with real-world transaction data

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13. Conclusion

This PhonePe Data Analysis project successfully demonstrates how raw transaction data can be transformed into meaningful insights using Power BI. The interactive dashboards provide a comprehensive view of transaction performance, failed payments, and service-wise analysis.

The project strengthens practical data analytics and visualization skills and serves as a strong portfolio project for aspiring data analysts and business intelligence professionals.

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14. Resources

All datasets, icons, and supporting materials required to replicate this project are provided through an external blog, ensuring easy access for learners.

End of Report