

# Telecom Customer Churn Analysis Report

## 1. Project Overview

The Telecom Customer Churn Analysis project aims to understand why customers leave a telecom company and identify the key factors influencing churn behavior. By leveraging Power BI, the project visualizes complex customer data and provides actionable insights that help businesses reduce customer loss and improve retention.

## 2. Dataset Details

Dataset Name: Telecom Customer Churn

Records: 7,042

Columns: 21

Source: Kaggle Dataset

Data Type: Customer demographics, service details, and billing information

## 3. Data Preparation Steps

Data cleaning and transformation were performed before visualization. The major steps included:

1. Removing duplicate records.
2. Handling missing values in TotalCharges.
3. Converting binary fields (SeniorCitizen: 0/1 to Yes/No).
4. Creating calculated columns for Tenure in months, Number of services used, and customer category ratios.

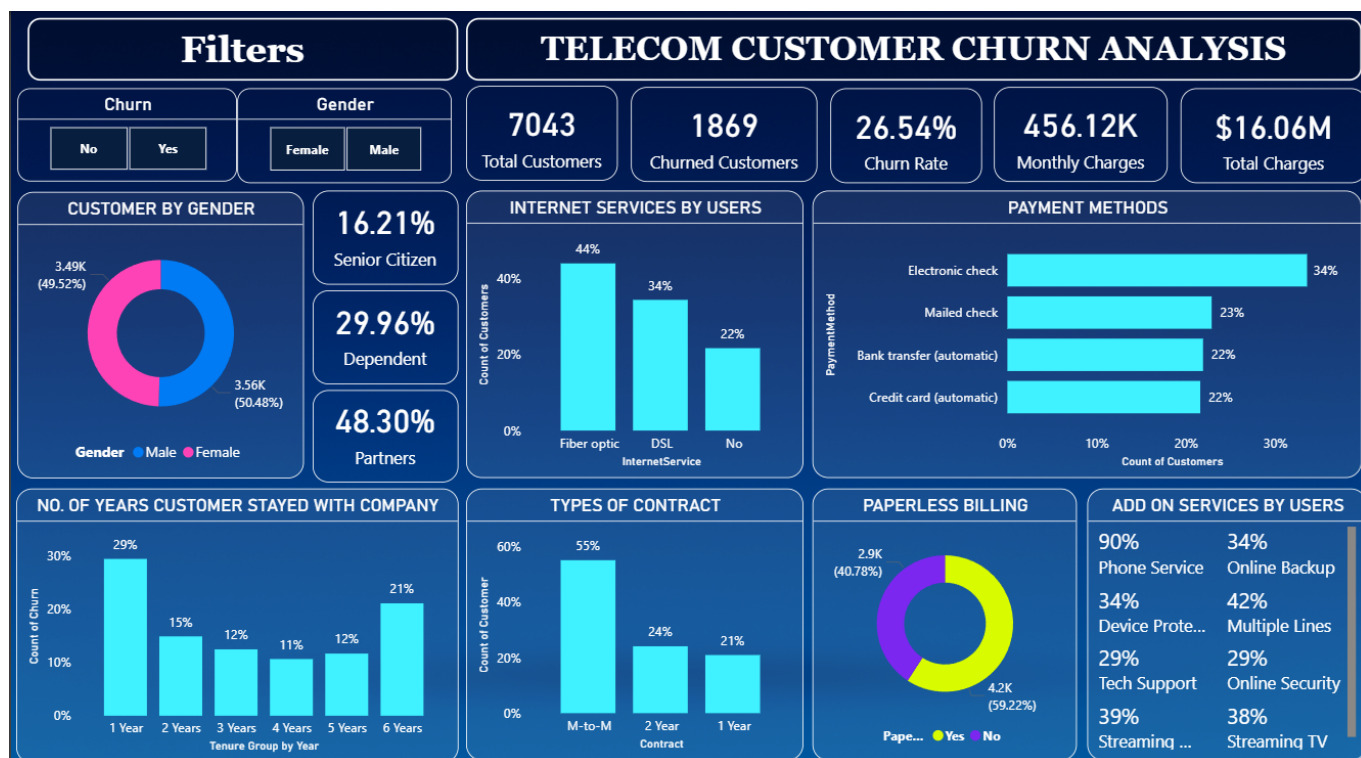
## 4. Tools & Technologies Used

- Microsoft Power BI: For dashboard creation and visualization
- Microsoft Excel: For data cleaning and preprocessing

## 5. Key Visuals in Dashboard

- Donut Charts: Gender and Paperless Billing distribution
- Bar Charts: Internet Service, Contract Type, Payment Methods, and Tenure
- KPI Cards: Total Customers, Churned Customers, Churn Rate
- Service Table: Top-used services such as Online Backup and Device Protection

## Dashboard Snapshot



## 6. Insights & Findings

1. Customers with month-to-month contracts show the highest churn rates.
2. Electronic check payment users are more likely to churn.
3. Fiber optic users churn more than DSL users.
4. Paperless billing is widely adopted.
5. Senior citizens and short-tenure customers show higher churn probabilities.

## 7. Recommendations

- Encourage long-term contracts by offering discounts or loyalty benefits.
- Provide incentives for auto-payments.
- Improve fiber optic service quality.
- Focus on digital transformation through paperless billing and mobile-friendly support.

## 8. Business Impact

This analysis helps the telecom company identify at-risk customer segments, design better retention campaigns, and improve long-term profitability through data-driven decisions.

## 9. Conclusion

The project successfully visualizes customer churn behavior using Power BI. It highlights important business metrics and enables decision-makers to take proactive steps to minimize churn and

improve customer experience.

## **10. Files Included**

Telecom\_Customer\_Churn\_Analysis\_Presentation.pptx - Final presentation file

PowerBI\_Dashboard.png - Dashboard image preview

README.md - GitHub project documentation

Telecom\_Churn\_Analysis\_Report.pdf - Detailed project report (this file)

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