



INNOVATION. AUTOMATION. ANALYTICS

PROJECT ON

TELECOM CUSTOMER CHURN ANALYSIS

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Agenda

- Project Overview
- Dataset Overview
- Data Preparation
- Key visuals & Dashboards
- Insights & Recommendations
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Project Overview

Customer churn is a major challenge in the telecom industry, as retaining existing customers is more cost-effective than acquiring new ones.

This project focuses on analyzing customer churn to understand the factors that influence customers to discontinue telecom services.

Using customer information such as demographics, service usage, tenure, contract type, and payment methods, the analysis examines patterns and trends related to customer churn.

The analysis helps businesses identify churn patterns and take data-driven actions to improve customer retention.

Dataset Overview

- The dataset used is Telecom Customer Churn dataset which contains customer-level information.
- It includes **7,043 customer records** with demographic details, service subscriptions, and billing information.
- Customer attributes cover personal details, tenure, phone and internet services, value-added services, contract types, and payment methods.
- Billing information includes monthly charges and total charges.
- The target variable **Churn** indicates whether a customer has discontinued the service.

Dataset Preparation

- **Dataset used :** Telecom Customer churn data (7,043 records, 21 Columns)
- **Steps Taken :**
 - 1.Imported the dataset into Power BI.
 - 2.Converted data types – e.g., Senior Citizen (0/1 → Yes/No).
 - 3.Created new columns like: Tenure Groups (in months)
 4. Created DAX measures for **Churn Rate %**, **Churned Customers**, **Retained Customers**

Key visuals



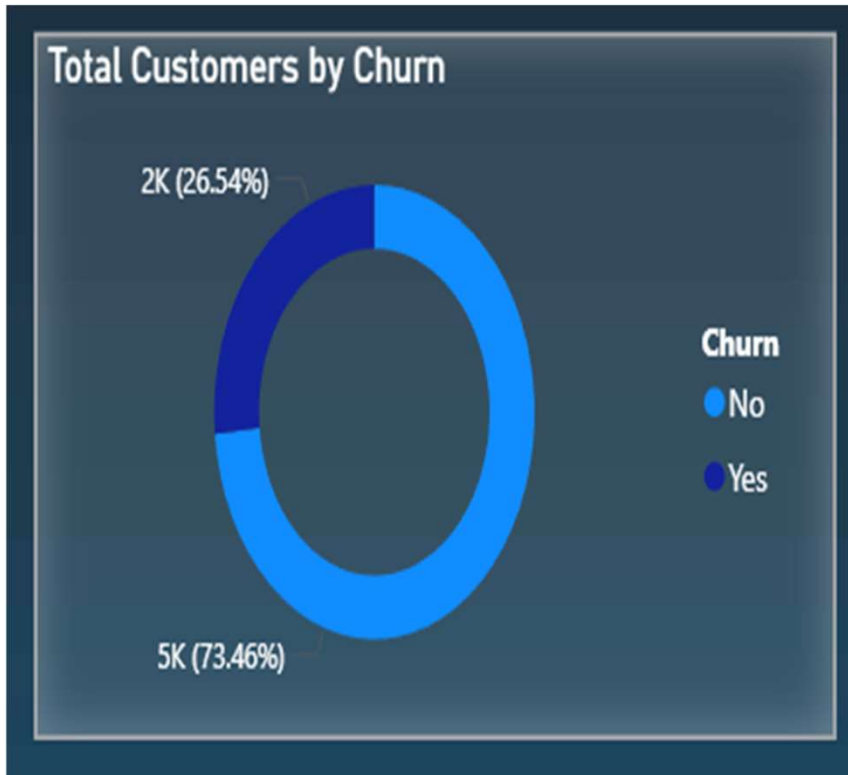
Total Customers : 7,043 customers analyzed

Churned Customers : 1,869 customers have left the service

Retained Customers : 5,174 active customers

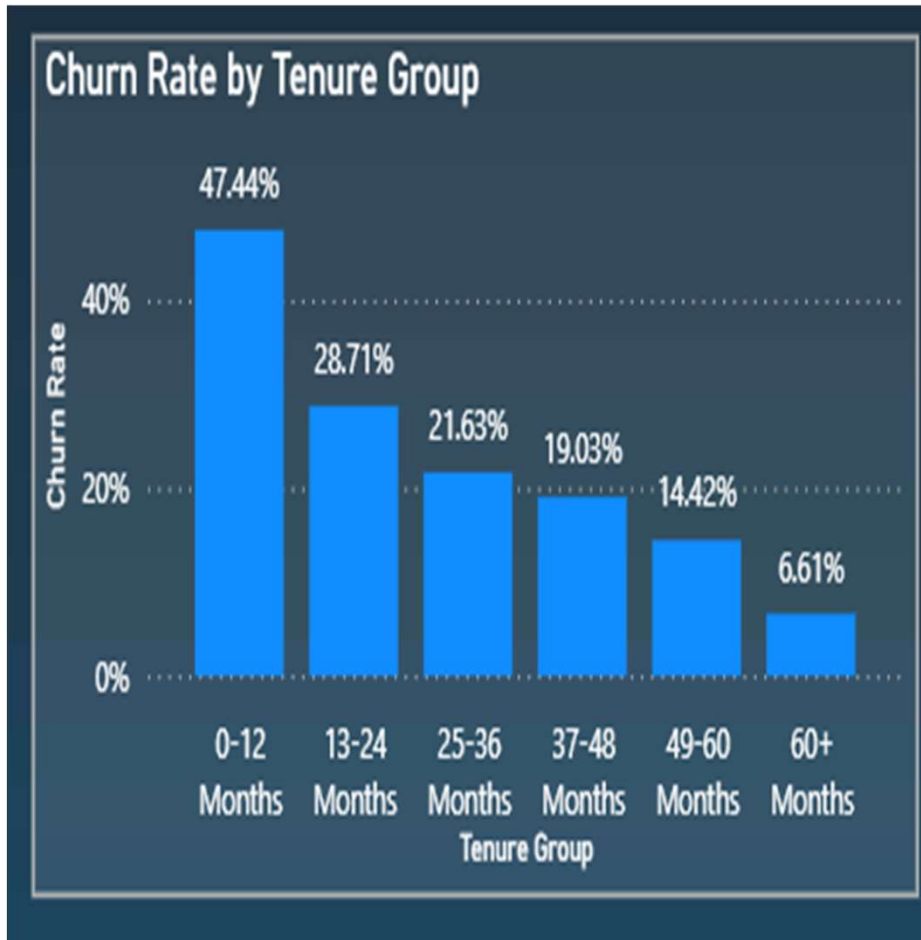
Churn Rate : 26.54% overall churn

Total Customers By Churn



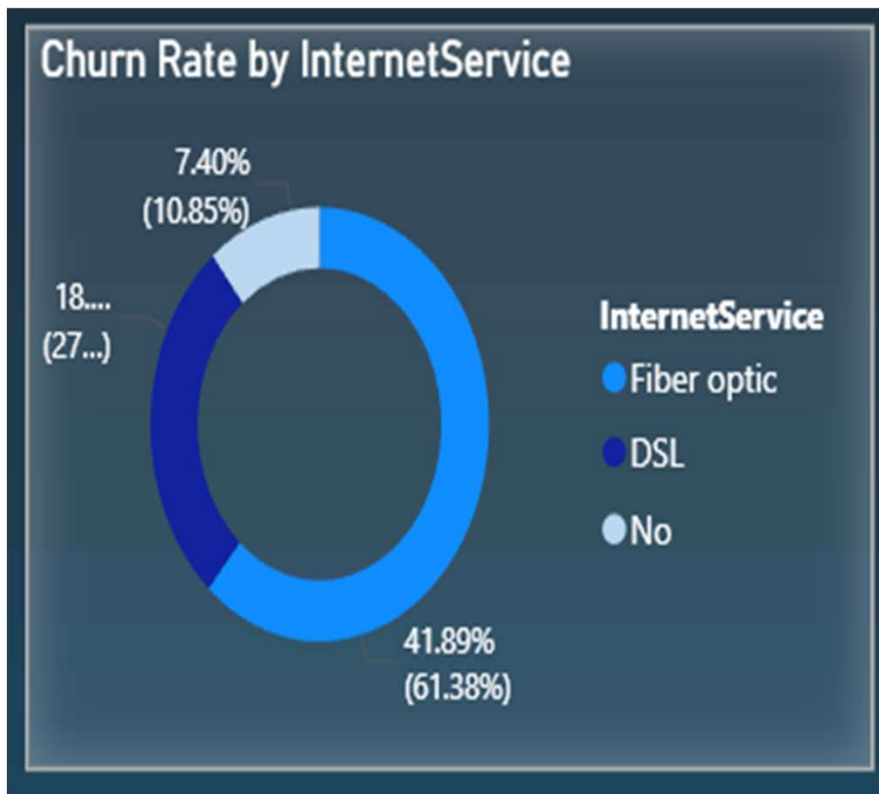
- **Non-churned customers (No): 5K (73.46%)**
- **Churned customers (Yes): 2K (26.54%)**
- A majority of customers are **still retained**, but a **significant portion has churned**.
- This indicates a **moderate churn rate**, which can impact revenue and growth.

Churn Rate by Tenure Group



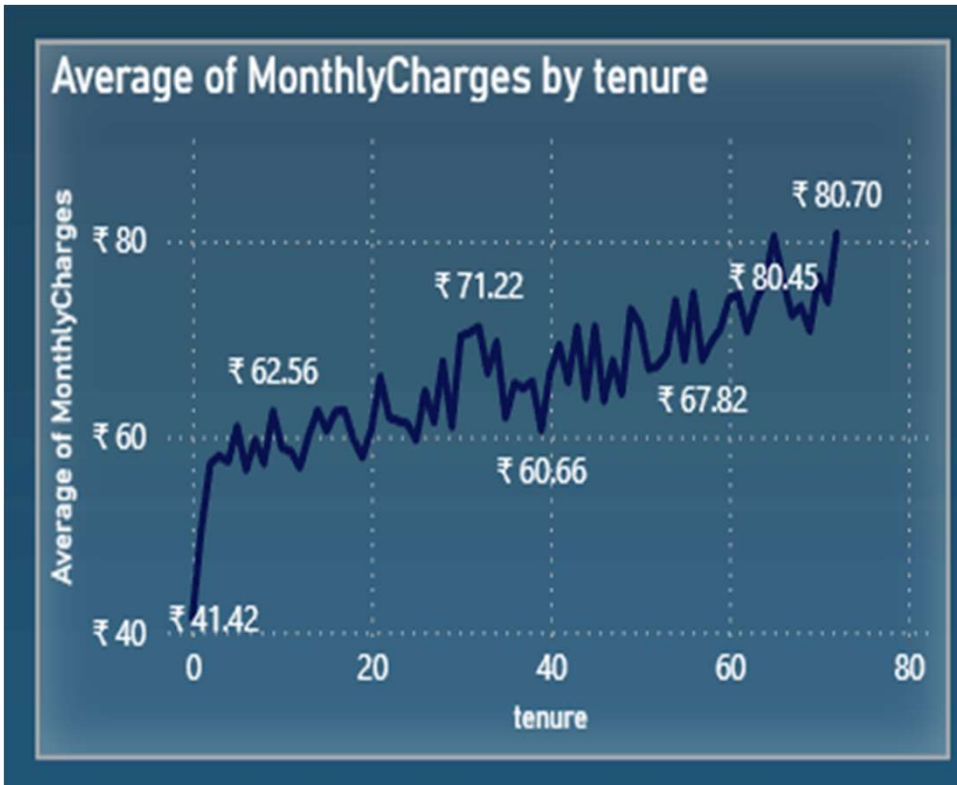
- 0–12 months tenure customers: Highest churn rate (above 47.44%)
- Most customers fall into the 0–12 months tenure group, showing a high number of new customers.
- A smaller proportion of customers have been with the company for more than 60 months.
- This indicates that while many customers join the service, fewer customers remain with the company long-term

Churn Rate by internet Service



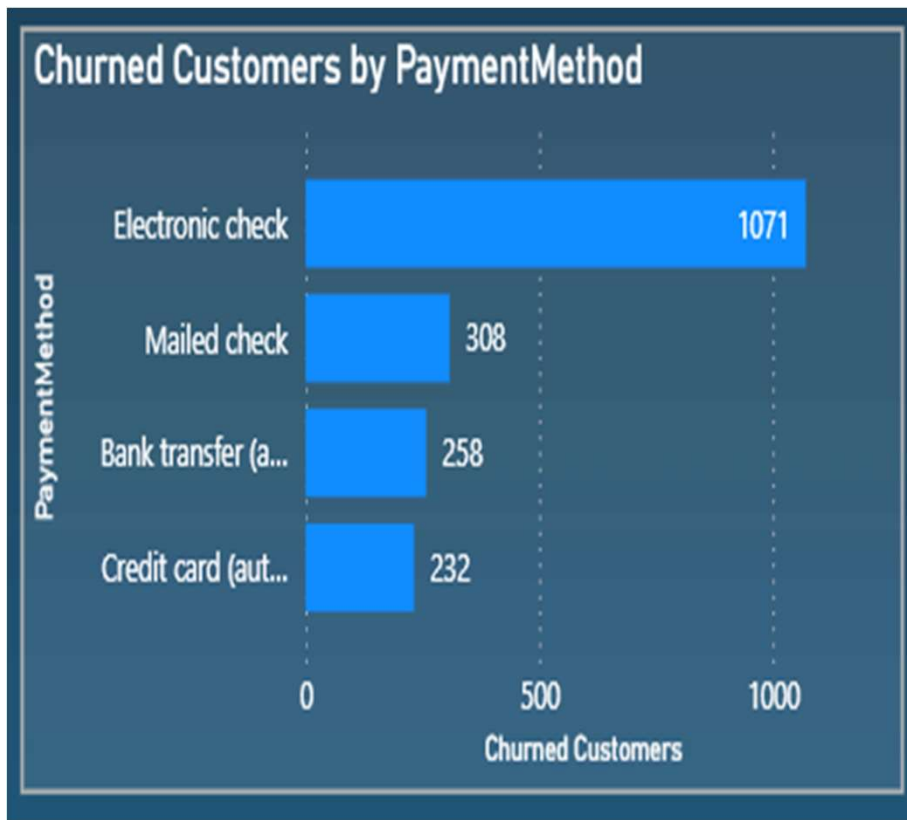
- Most churned customers use **Fiber optic internet service**, showing the highest churn rate (41.89 %) among all service types
- Customers using **DSL** have a moderate churn rate (18.96 %) compared to fiber optic users.
- Customers with **no internet service** (7.40 %) show the lowest churn

Average Monthly Charges by Tenure



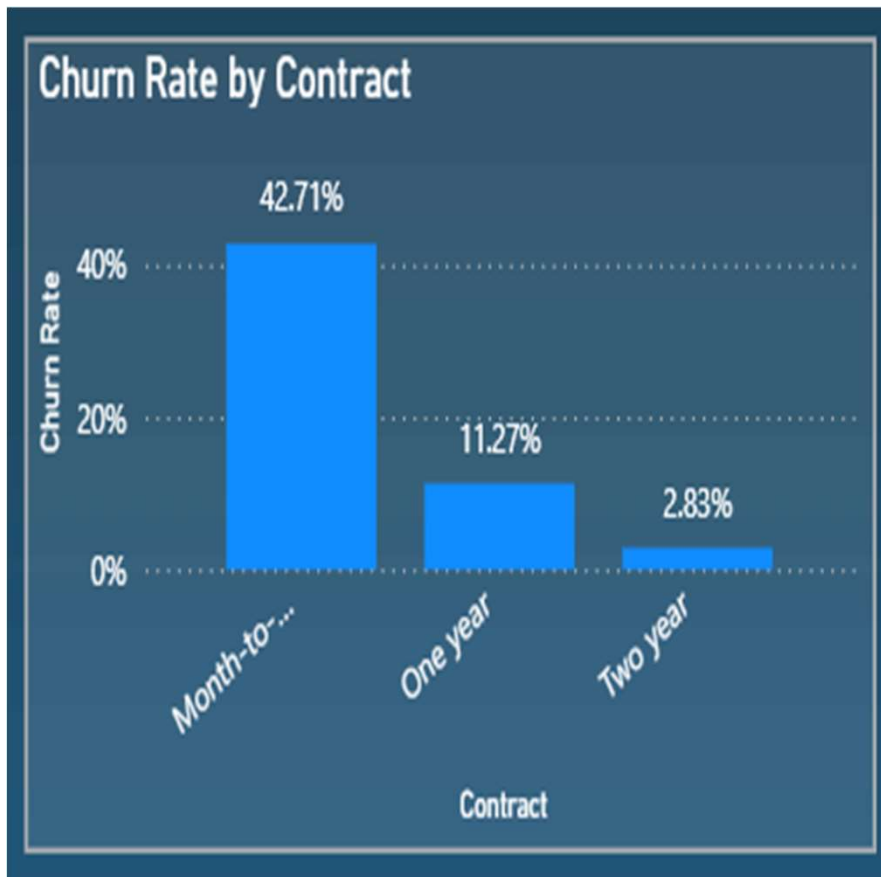
- Average monthly charges are **lower for customers with shorter tenure**.
- As customer tenure increases, the **average monthly charges gradually rise**.
- This indicates that long-term customers tend to subscribe to **higher-value or additional services** over time.

Churned Customers by PaymentMethod



- Most churned customers (1071) use **Electronic Check** as their payment method.
- Customers paying through **Mailed Check, Bank Transfer, and Credit Card** show significantly lower churn counts.

Churn Rate by Contract



- Customers with **month-to-month contracts** have the highest churn rate.(42.71%)
- Churn rate is significantly lower for customers with **one-year contracts**.(11,27%)
- Customers with **two-year contracts** show the lowest churn, indicating strong long-term retention.(2.83%)

Dashboard



Telecom Customer Churn Analysis

7043

Total Customers

1869

Churned Customers

5174

Retained Customers

26.54%

Churn Rate

₹ 64.76

Average of Monthly...

gender

- ☐ Female
☐ Male

Contract

- ☐ Month-to-month
☐ One year

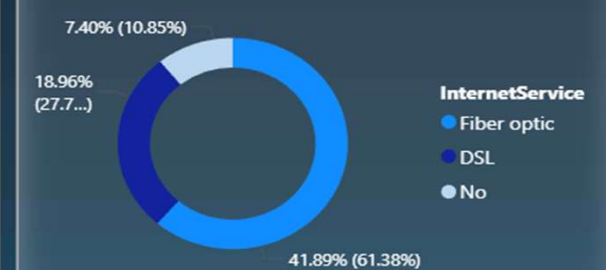
Total Customers by Churn



Churn Rate by Tenure Group



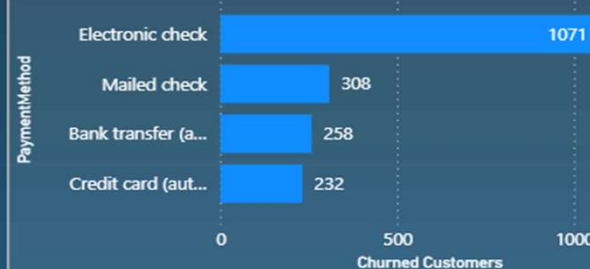
Churn Rate by InternetService



Average of MonthlyCharges by tenure



Churned Customers by PaymentMethod



Churn Rate by Contract



Key Insights

- Overall churn rate is **26.54%**, with **1,869 customers** leaving the service.
- Customer base is **almost equally split by gender**; gender has **minimal impact on churn**.
- **Highest churn occurs in the first 0–12 months**, showing new customers are most vulnerable.
- **Fiber optic users** show the highest churn compared to DSL and no-internet customers.
- Customers using **Electronic Check** have the highest churn count.
- **Month-to-month contracts** experience significantly higher churn than long-term contracts.

Recommendations

- Improve service quality and support for **fiber optic customers**.
- Encourage customers to switch from **month-to-month to long-term contracts**.
- Provide loyalty offers and customized plans for customers likely to churn.



Conclusion

- Customer churn is primarily influenced by tenure, contract type, internet service, and payment method.
- New customers, month-to-month contracts, fiber optic users, and electronic check payments show higher churn.
- By focusing on early retention, long-term contracts, and improved service quality, telecom companies can effectively reduce churn.

Link to see Dashboard

https://app.powerbi.com/links/fRCsZopBnk?ctid=3d5b4e0e-80e3-48d8-b88c-6cf7da10dab0&pbi_source=linkShare

THANK YOU

