



Telco Customer Churn



Executive summery

This report presents an end-to-end analysis of customer churn at a fictional telecommunications company using a dataset of over 7,000 customers

Data Source

The dataset used in this project is publicly available and was sourced from the IBM Sample Data repository for educational purposes. It simulates real-world customer records from a U.S.-based telecommunications company. The data includes demographic details, service usage, contract types, billing preferences, and churn labels.

Original source: [IBM Sample Data](#)

Accessed via: Kaggle

Data type: Structured CSV file with 7,043 records and 30+ features

Data Overview

Demographic information: Gender, Senior Citizen status, Partner, Dependents

Service details: Internet service type, streaming usage, tech support

Billing and contract: Contract type, payment method, paperless billing

Churn label and reasons

Tenure, charges, and customer lifetime value (CLTV)

Total Customers: 7,043

Churned Customers: 1,869

Churn Rate: 27%

Objective

The goal was to uncover behavioral patterns, churn drivers, and actionable insights to help improve customer retention and reduce churn rates.

Analyze which customer behaviors, services, and attributes are linked to higher churn and deliver business-driven recommendations based on real, quantifiable data.

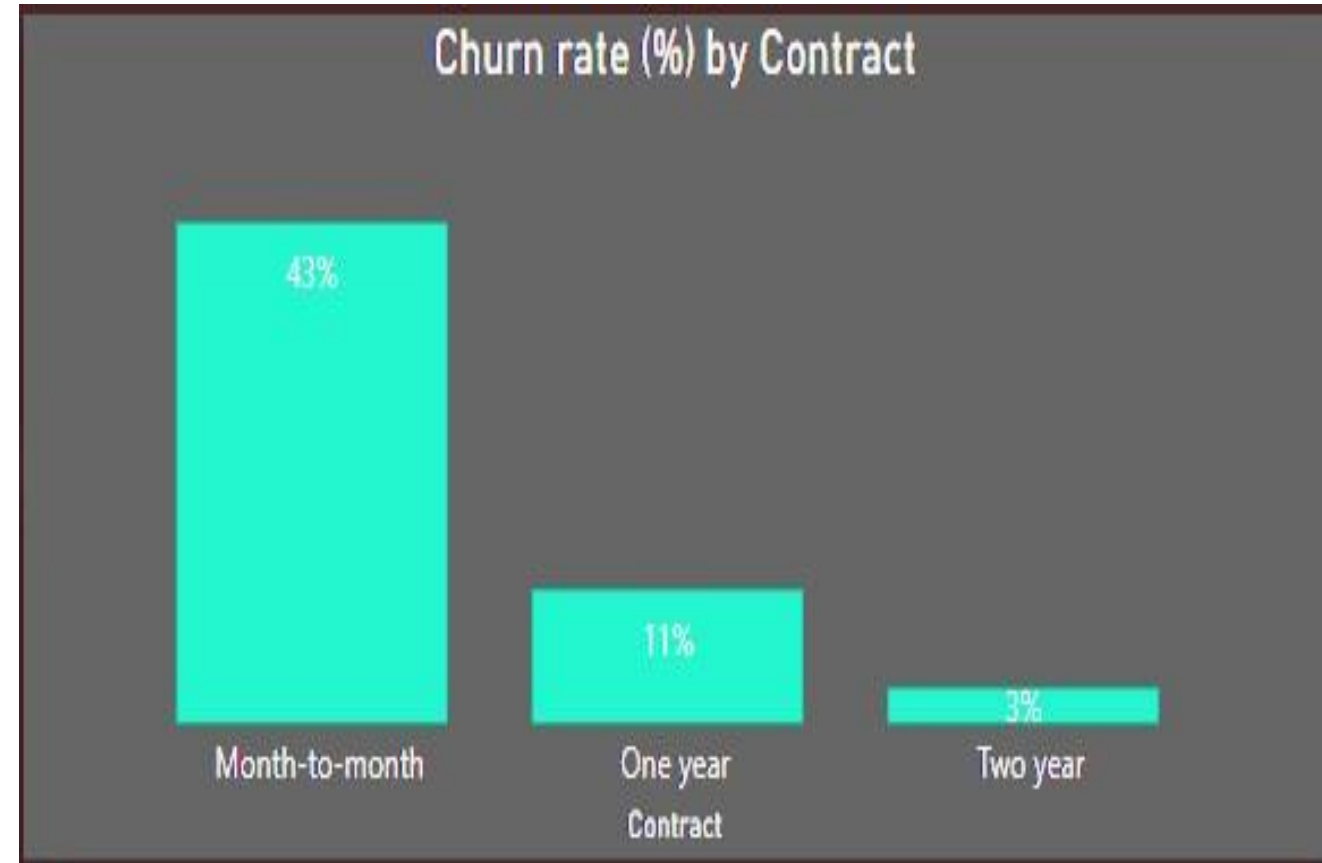
Churn by Contract Type

Month-to-month customers had a 43% churn rate

One-year contracts: 11%

Two-year contracts: 3%

Longer contracts clearly promote customer retention, possibly due to bundled pricing or loyalty incentives



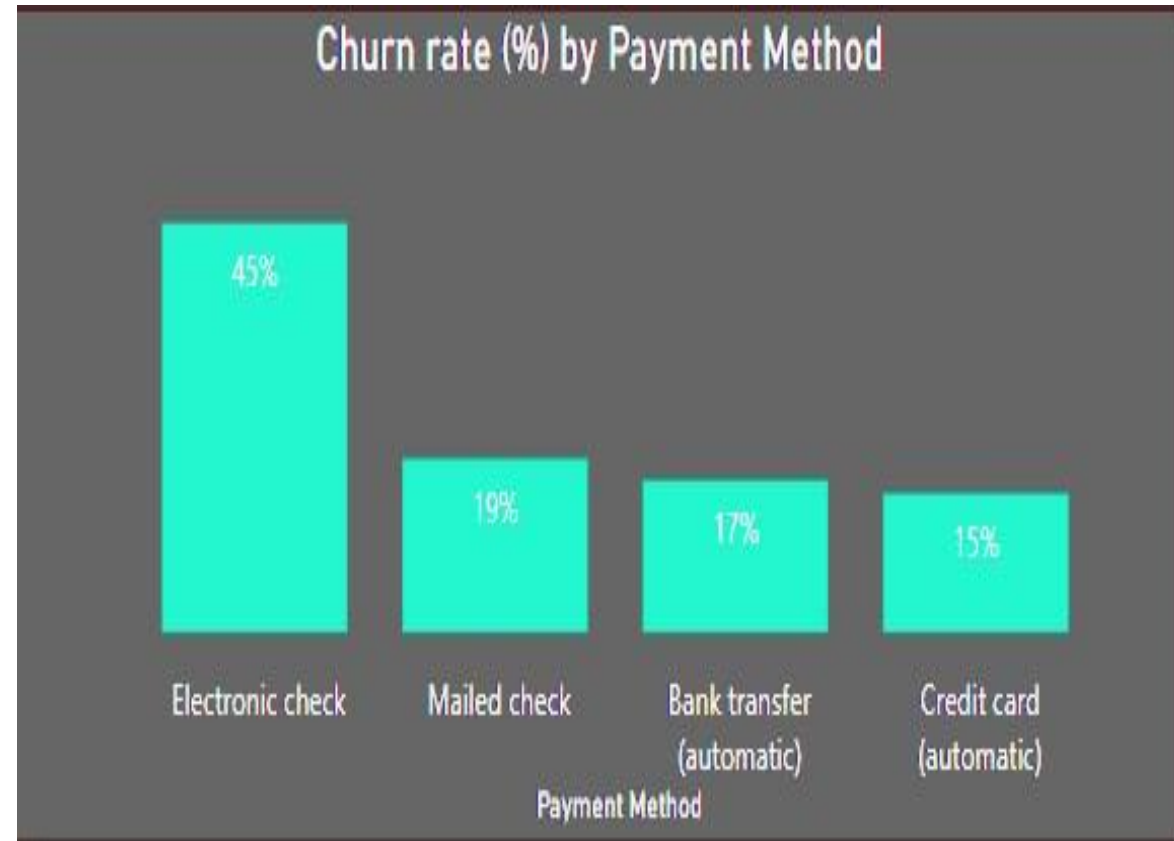
Churn by Payment Method

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Electronic Check users: 45% churn

Credit Card (Auto): 15%

Customers paying manually are more likely to churn—perhaps due to effort or flexibility. Encouraging automatic payments may help reduce churn.

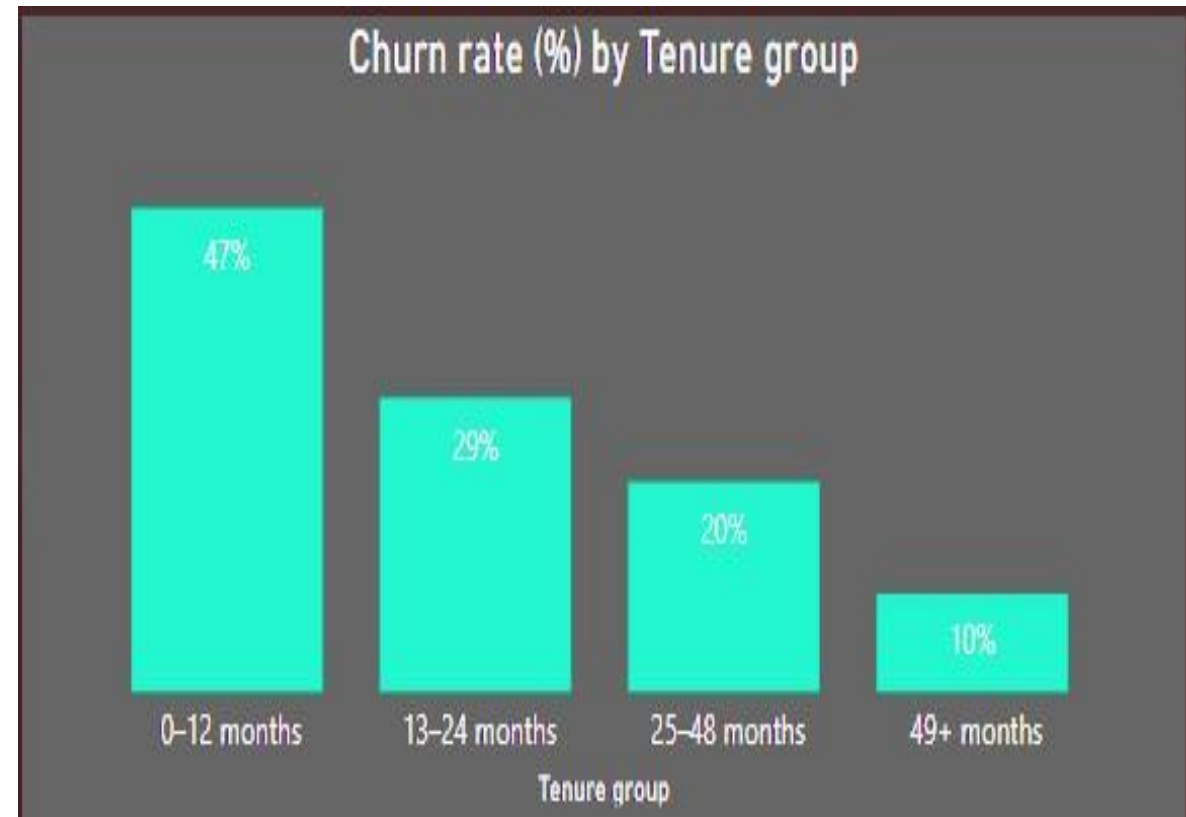


Churn by Tenure Group

0–12 months: 47% churn

49+ months: only 10%

New customers are the most at risk. Nearly half of them leave within the first year, indicating poor onboarding or unmet expectations early in the lifecycle



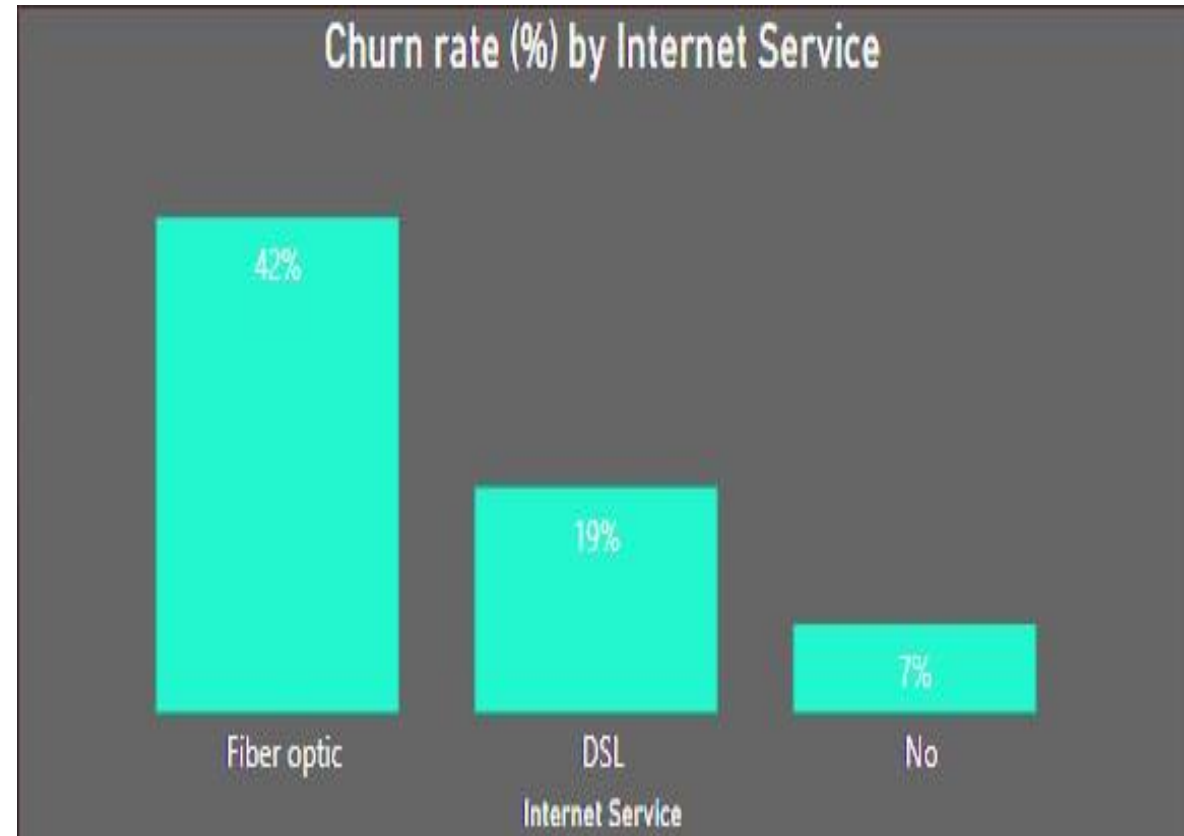
Churn by Internet Service

Fiber Optic users had the highest churn (42%)

DSL users: 19%

No Internet Service: 7%

Customers with fiber optic service are leaving at more than double the rate of DSL users. Expectations around speed and reliability are likely unmet



Top Churn Reasons

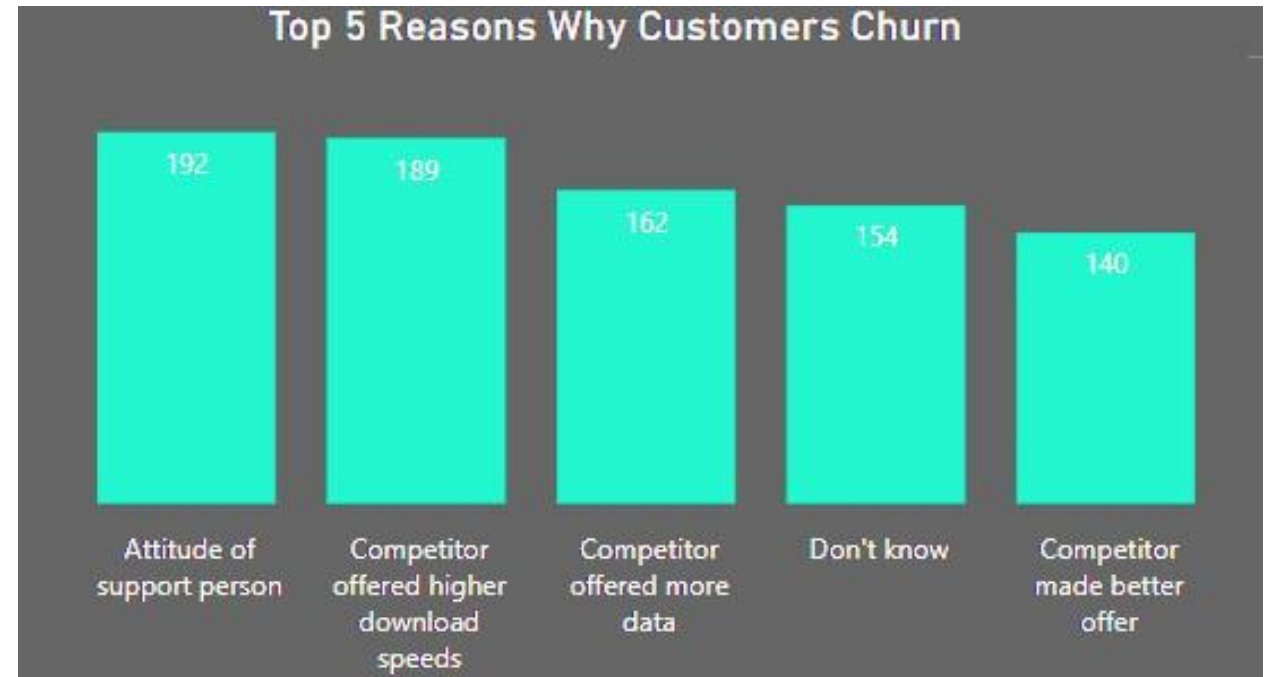
1-Attitude of support person (192 customers)

2-Competitor's better download speed (189 customers)

3-Competitor offered more data (169 customers)

4-Don't know (154 customers)

5-Competitor made a better offer (140 customers)



Service quality and competitive offerings are leading to churn. Customer service behavior alone caused more than 190 customers to leave.

Demographics

Senior citizens churn at 42%,
compared to 24% for non-seniors

Customers with both partners and
dependents churn at just 4%

Influence of Customer Attributes:

Partner + Dependent: 4% churn (much lower)

Paperless Billing: No – 16% churn; Yes – 34% Senior
Citizens: 42% churn vs. 24% for non-seniors

Elderly customers and paperless billing users are more
likely to churn.

Customers with strong household ties are more loyal—perhaps due to shared decision-making or bundled services.

Business Insights & Recommendations

Improve Customer Service Training

The top reason for churn was poor customer support experience.

Promote Long-Term Contracts

Offer discounts or perks to encourage annual or biannual plans.

Target At-Risk Groups Early

Prioritize onboarding and support for new users in the first 12 months.

Encourage Auto-Pay Adoption

Reduce friction in billing by incentivizing automatic payments.

Customize Offers for Seniors and Family Users

Seniors may need more guided support. Promote family bundles to partners/dependents.

Enhance Fiber Service Performance

Address dissatisfaction among fiber users with speed or reliability issues.

