

Telco Customer Churn Analysis

Overview

Customer churn is a major concern for telecom companies, as retaining customers is often more cost-effective than acquiring new ones. This analysis explores key factors driving customer churn and provides actionable insights based on data visualization and statistical findings.

Dataset Summary

- **Total Customers:** 7,043
 - **Churned Customers:** 1,869 (26.5% of total customers left)
 - **Total Features in Dataset:** 21
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Key Insights

1. Churn Distribution

- 26.5% of customers have left the service.
- The majority of customers (73.5%) are retained, but churn remains a significant challenge.

Chart Stats:

- Total Customers: 7,043
 - Churned Customers: 1,869
 - Retained Customers: 5,174
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2. Does Gender Affect Churn?

- Males: 26.9% churned
- Females: 25.8% churned
- **Insight:** Churn rates are nearly identical across genders, meaning gender does not significantly impact customer retention.

Chart Stats:

- Male Customers: 3,554
- Female Customers: 3,489
- Churned Males: 956

- Churned Females: 903
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3. Do Senior Citizens Churn More?

- Senior Citizens (age 65+): 41% churned (higher risk group)
- Non-Senior Citizens: 24% churned
- Insight: Older customers might need better service plans or targeted retention strategies.

Chart Stats:

- Senior Citizens: 1,140
 - Churned Seniors: 468
 - Non-Senior Customers: 5,903
 - Churned Non-Seniors: 1,401
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4. How Does Contract Type Affect Churn?

- Month-to-Month Contracts: 42% churned (highest risk group)
- One-Year Contracts: 11% churned
- Two-Year Contracts: 3% churned (lowest churn rate)
- Insight: The longer the contract, the lower the churn rate. Encouraging customers to opt for long-term contracts could reduce churn.

Chart Stats:

- Month-to-Month Customers: 3,872 | Churned: 1,627
 - One-Year Customers: 1,473 | Churned: 162
 - Two-Year Customers: 1,698 | Churned: 51
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5. Does Internet Service Type Impact Churn?

- DSL: 19% churned
- Fiber Optic: 42% churned (highest churn)
- No Internet Service: 10% churned
- Insight: Fiber optic users churn the most, likely due to cost or service dissatisfaction. DSL users are more stable.

Chart Stats:

- DSL Users: 2,421 | Churned: 460

- Fiber Optic Users: 3,009 | Churned: 1,264
 - No Internet Users: 1,613 | Churned: 145
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6. Does Monthly Billing Affect Churn?

- Churned Customers' Avg. Monthly Bill: \$74.42
- Retained Customers' Avg. Monthly Bill: \$61.25
- Insight: Higher monthly charges correlate with higher churn. Customers with expensive plans may feel dissatisfied.

Chart Stats:

- Lowest Monthly Bill: \$18.25
 - Highest Monthly Bill: \$118.75
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7. How Do Payment Methods Influence Churn?

- Electronic Check: 46.2% churned (highest risk)
- Credit Card: 15.3% churned
- Bank Transfer: 16.8% churned
- Insight: Customers using electronic checks are at the highest risk. Encouraging them to switch to more stable payment options might reduce churn.

Chart Stats:

- Electronic Check Users: 2,384 | Churned: 1,101
 - Credit Card Users: 1,298 | Churned: 199
 - Bank Transfer Users: 1,359 | Churned: 228
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8. Correlation Analysis (Heatmap)

- Tenure (how long a customer stays) is negatively correlated with churn (-0.35).
- Higher Monthly Charges have a weak positive correlation (0.19) with churn.
- Insight: Customers who have been with the company longer are less likely to leave, while higher bills slightly increase churn.

Key Findings from Heatmap:

- Customers with short tenure are at higher risk.
- High monthly bills lead to dissatisfaction.

- Payment methods and contract types significantly influence churn.
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Recommendations (How to Reduce Churn)

1. Encourage Long-Term Contracts - Offer discounts to shift customers from month-to-month plans to yearly plans.
2. Improve Fiber Optic Services - Address customer complaints and pricing concerns.
3. Switch Customers from Electronic Checks - Offer incentives to move to credit card or bank transfers.
4. Retain Senior Citizens - Provide dedicated customer support and loyalty benefits.
5. Lower Monthly Charges for High-Risk Customers - Introduce affordable plans for at-risk customers.