

Telco Customer Churn Analysis

The Telco dataset's many facets that affect loss of customers are thoroughly examined in this analysis. **Churn refers to customers who have discontinued their service with the company.** The main objective is to gain a detailed understanding of the factors that contribute to customer turnover and to offer practical, evidence-based suggestions for reducing attrition and improving customer retention.

Key Findings:

1. Overall Churn Rate:
 - 26.5% of customers have churned.
 - 73.5% are retained.
2. Tenure and Loyalty:
 - Customers with shorter tenure (1–2 months) are most likely to churn.
 - Longer-tenure customers (1–2 years) show strong retention (as low as 2.8% churn).
3. Senior Citizens Churn More:
 - Senior customers (16.2% of base) have a churn rate of 41.7%.
 - Non-seniors churn at 23.6%.
4. Payment Method Influence:
 - Customers using electronic checks have a 45.3% churn rate.
 - Auto-pay methods (credit card, bank transfer) show much lower churn (~15%).
5. Internet Service Type:
 - Fiber optic users churn at 41.9%, the highest among internet types.
 - DSL users: 19% churn
 - No internet service: only 7.4% churn
6. Security Services Help Retain Customers:
 - Churn for customers without online security: 41.8%
 - With online security: only 14.6%
7. Gender Has No Significant Impact:
 - Male and female churn rates are almost identical.

Executive Summary:

Objective:

The analysis aims to uncover patterns and drivers of customer churn within the telecom sector using visual exploration. It focuses on identifying the impact of variables such as contract type, payment method, tenure, and demographic segments on churn behavior, with the ultimate goal of informing strategic customer retention initiatives.

Key Insights & Findings:

1. Contract Type and Churn:

- Month-to-month customers show the highest churn rate (~43%), highlighting them as the most vulnerable group.
- One-year and two-year contracts drastically reduce churn to ~11% and ~3%, respectively.
- Implication: Lock-in periods appear to increase loyalty and customer stickiness.

2. Payment Method and Churn:

- Customers using Electronic Check have the highest churn rate (~45%), clearly visible in your bar chart.
- Customers paying through Credit Card, Bank Transfer, or Mailed Checks show churn rates around 15–18%.
- Implication: Secure and perceived-reliable payment channels may boost customer confidence.

3. Tenure and Churn Behavior:

- Customers with tenure < 12 months exhibit the highest churn (~50%).
- Churn consistently declines with increased tenure, dropping to ~15% after three years.
- Implication: Early-stage customer engagement is critical—this trend was clearly shown in your line plot.

4. Internet Service Type and Churn:

- Fiber Optic users churn more frequently (~30%) than DSL users (~20%).
- Implication: While fiber may offer better speed, expectations or service reliability could be affecting satisfaction.

5. Senior Citizens and Churn:

- Senior citizens churn at a rate of ~41%, compared to ~26% for younger users.
- Implication: Older customers may need more tailored support or communication strategies.

Visual Highlights:

- Bar plots effectively showcase the stark differences in churn across payment methods and contract types.
- Line graphs clearly illustrate the downward trend in churn as tenure increases.
- Percentage-based pie charts help emphasize demographic differences, such as churn by age group and internet type.
- Heatmaps and grouped bar plots assist in identifying correlation patterns between variables like Monthly Charges and Total Charges in relation to churn.

Strategic Recommendations

1. **Focus on New Customers:** Target customers in their first 3 months with personalized offers, welcome discounts, and proactive support.
2. **Encourage Automatic Payments:** Incentivize switching from manual methods (especially electronic check) to auto-payment via discounts or loyalty rewards.
3. **Promote Online Security Services:** Bundle online security with standard plans or offer free trial periods to lower churn.
4. **Address Fiber Optic Concerns:** Investigate customer experience, pricing, or technical issues related to fiber optic services. **Consider loyalty plans or enhanced service tiers.**
5. **Create Senior-Focused Plans:** Offer simplified packages, senior discounts, or better customer service options tailored for older customers.
6. **Loyalty Programs for Long-Term Users:** Reward tenure milestones with exclusive benefits to reinforce commitment.
7. **Lock-in Plans for Month-to-Month Users:** Offer incentives to transition from month-to-month to annual or semi-annual plans.
8. **Gather Customer Feedback Regularly:** Deploy surveys or feedback forms to uncover hidden reasons for dissatisfaction.