

Executive Summary & Recommendations:

This notebook provides a comprehensive analysis of customer churn data to identify key drivers behind customer retention and loss. Leveraging detailed visualizations and exploratory data analysis (EDA), it uncovers patterns and actionable insights for improving customer satisfaction and reducing churn rates.

Key Findings:

1. Churn vs. Services Usage:

- **Phone Service and Multiple Lines:**

Customers with no phone service exhibit lower churn rates, potentially due to reliance on alternative communication methods or bundling with other services. Conversely, those with multiple lines tend to churn less, indicating value in bundled offerings.

- **Internet Service Type:**

Fiber-optic internet users show higher churn rates compared to DSL users, possibly due to cost, reliability, or competition. Customers with no internet service exhibit the lowest churn, likely due to reduced dependency on advanced services.

- **Critical Services:**

The absence of **Online Security**, **Device Protection**, and **Tech Support** correlates strongly with higher churn. These findings suggest that such features significantly influence customer loyalty.

2. Value-Added Services Impact:

- **Streaming TV and Streaming Movies:**

Churn rates are relatively balanced among customers subscribing to these services, implying that entertainment offerings alone do not drive retention but contribute to overall satisfaction.

- **Online Backup Services:**

Customers with no online backup services are more likely to churn, highlighting the need to offer data safety solutions.

3. Demographic Factors:

- **Senior Citizens:**

Older customers (Senior Citizen = 1) are more prone to churn compared to younger customers, suggesting a need for tailored services and support for this demographic.

- **Dependents and Partners:**

Customers without dependents or partners tend to churn more often, indicating that household factors influence retention.

4. Tenure and Contract Type:

- Customers with shorter tenures (less than a year) exhibit the highest churn rates, highlighting the criticality of onboarding strategies.

- Month-to-month contract users are far more likely to churn compared to those with long-term contracts, emphasizing the importance of incentivizing long-term commitments.

Visualization Insights:

- The analysis employs bar charts, count plots, and comparative visuals to display churn rates across service categories and demographic groups.
- Visual patterns reveal that bundled services and comprehensive support features lead to better retention.
- Fiber-optic internet usage consistently emerges as a pain point, with higher churn rates visualized for this segment.

Recommendations:

- **Enhance Service Reliability:** Address issues related to fiber-optic internet, potentially by offering competitive pricing or improving service quality.
- **Promote Value-Added Features:** Encourage adoption of critical services like Online Security, Tech Support, and Device Protection through promotions or bundled pricing.
- **Targeted Retention Strategies:** Focus on retaining customers with short tenures or month-to-month contracts by offering personalized discounts or loyalty rewards.
- **Support for Vulnerable Groups:** Develop tailored engagement strategies for senior citizens and single households to address their specific needs and reduce churn.

This analysis highlights critical areas for improvement and provides actionable strategies to enhance customer experience, build loyalty, and reduce churn rates.