

Summary and Recommendation

- **Objective**

This analysis examines customer churn data to identify patterns and trends influencing churn. The goal is to provide actionable insights for reducing churn and improving customer retention.

- **Key Findings**

1. **Churn Distribution:**

- Approximately **27%** of customers have churned, a significant proportion that underscores the need for focused retention strategies.

2. **Demographic Insights:**

- Senior Citizens have a **42% churn rate**, notably higher than non-senior customers (**23% churn rate**).
- Gender does not appear to significantly influence churn, as the churn rates for male and female customers are nearly identical.

3. **Service Usage Patterns:**

- Customers not subscribed to additional services such as Online Security or Tech Support show churn rates exceeding **40%**, compared to less than **20%** for those using these services.
- Customers with "No Internet Service" are less likely to churn, indicating that Internet-related services play a pivotal role in churn behavior.

4. **Contract Types:**

- Month-to-month contract customers exhibit the highest churn rate (**43%**), compared to **11%** for one-year contracts and **3%** for two-year contracts.
- The flexibility of month-to-month contracts likely contributes to this trend.

5. **Billing and Payment Methods:**

- Customers using electronic checks as a payment method have the highest churn rate (**45%**), significantly higher than other payment methods (around **20%-25%**).
- This suggests potential dissatisfaction or inconvenience associated with electronic check payments.

6. **Customer Tenure:**

- Churn is inversely related to tenure: customers with less than 1 year of tenure churn at a rate of **52%**, while those with more than 5 years churn at only **10%**.
- This highlights the importance of engaging customers early in their relationship.

7. **Monthly Charges:**

- Customers with higher monthly charges (>\$80) churn at a rate of **40%**, while those with lower charges (<\$50) churn at **18%**. Pricing and perceived value may significantly influence churn behavior.

Visual Insights

The analysis features numerous visualizations to highlight these findings:

- **Stacked Bar Charts:** Breakdown of churn by services like InternetService, TechSupport, and StreamingTV, showing clear differences in churn rates.
- **Count Plots:** Contract types and payment methods visualized to highlight churn patterns.
- **Boxplots and Histograms:** Illustrate churn distribution across numerical variables like tenure and monthly charges.
- **Correlation Heatmap:** Displays relationships between variables and churn, emphasizing key drivers.

Recommendations

1. **Focus on Early Retention:**
 - Address the high churn rate (52%) among new customers. Introduce tailored onboarding programs, customer education, and loyalty rewards in the first year.
2. **Incentivize Long-Term Contracts:**
 - Offer discounts or other incentives to encourage customers to switch from month-to-month contracts to longer-term plans. Customers on two-year contracts churn at a significantly lower rate (3%).
3. **Enhance Service Offerings:**
 - Customers with Online Security, Tech Support, and Device Protection services churn less. Cross-sell these services during customer onboarding and renewal processes.
4. **Address Payment Method Concerns:**
 - Investigate and improve the electronic check payment experience, as it is associated with the highest churn rate (45%). Offer more secure and convenient payment alternatives.
5. **Review Pricing Strategies:**
 - Consider adjusting pricing for customers with high monthly charges (> \$80) to better match perceived value and reduce the associated churn rate (40%).
6. **Target High-Risk Segments:**
 - Focus retention efforts on Senior Citizens (42% churn rate) and customers with month-to-month contracts (43% churn rate). Use predictive models to identify customers likely to churn and implement personalized outreach.

Summary Statistics

- Total Churn: **27%** of the customer base.
- Highest Churn Demographic: Senior Citizens (**42%**).
- Highest Churn Services: Customers without Online Security (**42%**) or Tech Support (**41%**).

- Highest Risk Payment Method: Electronic checks (**45% churn**).
- Lowest Churn: Two-year contract customers (**3% churn**) and customers with long tenure (>5 years, **10% churn**).