

# Customer Churn Analysis Report

**Overview:** This report provides a detailed analysis of customer churn patterns using the provided dataset. It focuses on the relationship between various customer attributes and the likelihood of churn. The aim is to identify key indicators contributing to customer attrition and provide actionable insights for improving retention.

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## 1. Gender

- Churn rates among male and female customers are nearly identical, approximately 27%.
- **Conclusion:** Gender is not a significant predictor of churn.

## 2. Senior Citizen

- Senior citizens (coded as 1) have a churn rate of approximately 42%, compared to 24% for non-senior customers.
- **Conclusion:** Senior citizens are significantly more likely to churn and may require targeted retention efforts.

## 3. Partner

- Customers without a partner have a churn rate of approximately 32%, while those with a partner have a lower rate of around 20%.
- **Conclusion:** Partnership appears to contribute to customer stability and lower churn.

## 4. Dependents

- Customers without dependents churn at a rate of around 32%, compared to just 16% for those with dependents.
- **Conclusion:** Customers with dependents tend to be more stable and less likely to churn.

## 5. Phone Service

- Churn is slightly higher among customers with phone service (~27%) than those without.
- **Conclusion:** Phone service does not significantly impact churn behavior.

## 6. Multiple Lines

- Customers with multiple lines show a higher churn rate (~30%) compared to those without (~22%).

- **Conclusion:** Having multiple lines may not enhance customer loyalty.

## 7. Internet Service

- Customers with fiber optic internet show the highest churn rate (~42%), while those with DSL or no internet service churn significantly less (~19% and ~8% respectively).
- **Conclusion:** Fiber optic customers may have higher expectations or price sensitivity, making them more prone to churn.

## 8. Online Security

- Customers without online security services churn at a rate of around 40%, compared to only 15% among those with the service.
- **Conclusion:** Security services significantly reduce churn.

## 9. Online Backup

- Churn is approximately 36% among customers without online backup, and about 22% for those with it.
- **Conclusion:** Online backup adds value and helps in customer retention.

## 10. Device Protection

- Customers lacking device protection churn at a rate of 35%, while those with protection have a churn rate of 21%.
- **Conclusion:** Optional add-ons like device protection enhance retention.

## 11. Tech Support

- Churn is approximately 39% for customers without tech support and 17% for those with it.
- **Conclusion:** Technical support is a strong factor in retaining customers.

## 12. Streaming TV

- Customers with streaming TV services have a churn rate of around 31%, versus 24% for those without.
- **Conclusion:** Streaming services do not contribute to retention and may increase churn.

## 13. Streaming Movies

- Similar to streaming TV, churn is higher (30%) among users of streaming movies.
- **Conclusion:** Entertainment services alone do not enhance loyalty.

## 14. Contract Type

- Month-to-month customers churn at a rate of 44%.
- One-year contract holders churn at about 11%, and two-year contract customers at just 3%.
- **Conclusion:** Longer contracts are highly effective in reducing churn.

## 15. Paperless Billing

- Customers with paperless billing churn more (~33%) than those receiving paper bills (~19%).
- **Conclusion:** Paperless billing may attract tech-savvy or price-conscious users who are more likely to churn.

## 16. Payment Method

- The highest churn rate (~45%) is observed among customers using electronic checks.
  - Bank transfers and credit card payments are associated with lower churn (~15-20%).
  - **Conclusion:** Payment method correlates with customer trust and loyalty.
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## Key Findings and Recommendations:

- **High-risk segments:** Senior citizens, customers on month-to-month contracts, those using electronic checks, and those with fiber optic internet.
- **Retention strategies:**
  - Promote long-term contracts with incentives.
  - Bundle valuable services like tech support and online security.
  - Target senior citizens and customers without dependents/partners with tailored engagement plans.
  - Reassess fiber optic service quality and pricing structure.