

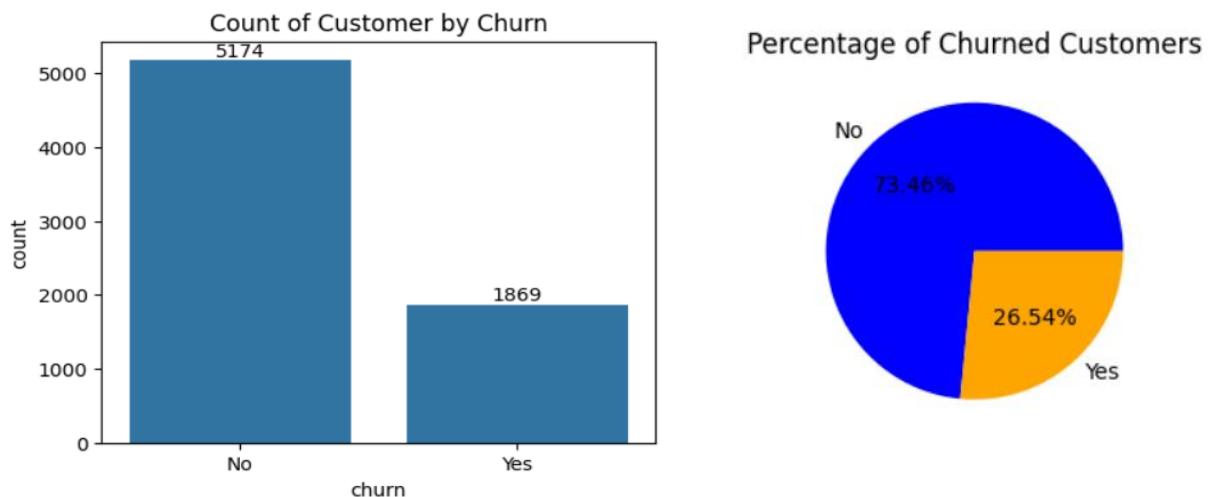
# Customer Churn Analysis Report

## Data Cleaning and Transformation

- Standardization: Column names were converted to lowercase for consistency.
- Encoding: The SeniorCitizen column was transformed from binary (0/1) to categorical (No/Yes).
- Missing Values: Blank values in TotalCharges (where Tenure was 0) were replaced with 0, and the column was converted to float.

## Overall Churn Distribution

The analysis identified the proportion of the customer base that has discontinued service.

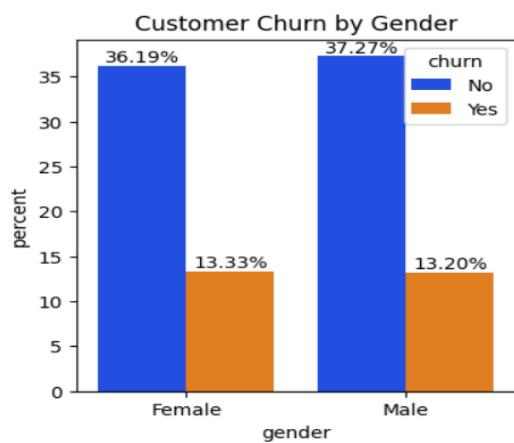


Finding: 26.54% of the total customers have churned.

## Demographic Analysis

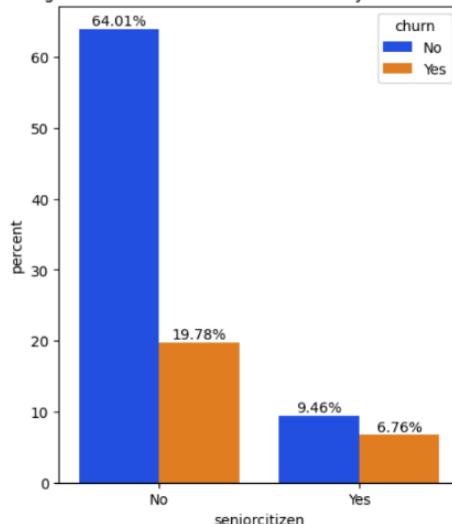
We examined churn rates based on gender and senior citizen status.

**Gender:** Churn rates are approximately equal between males and females.



**Senior Citizens:** There is a higher churn rate among senior citizens compared to the younger demographic.

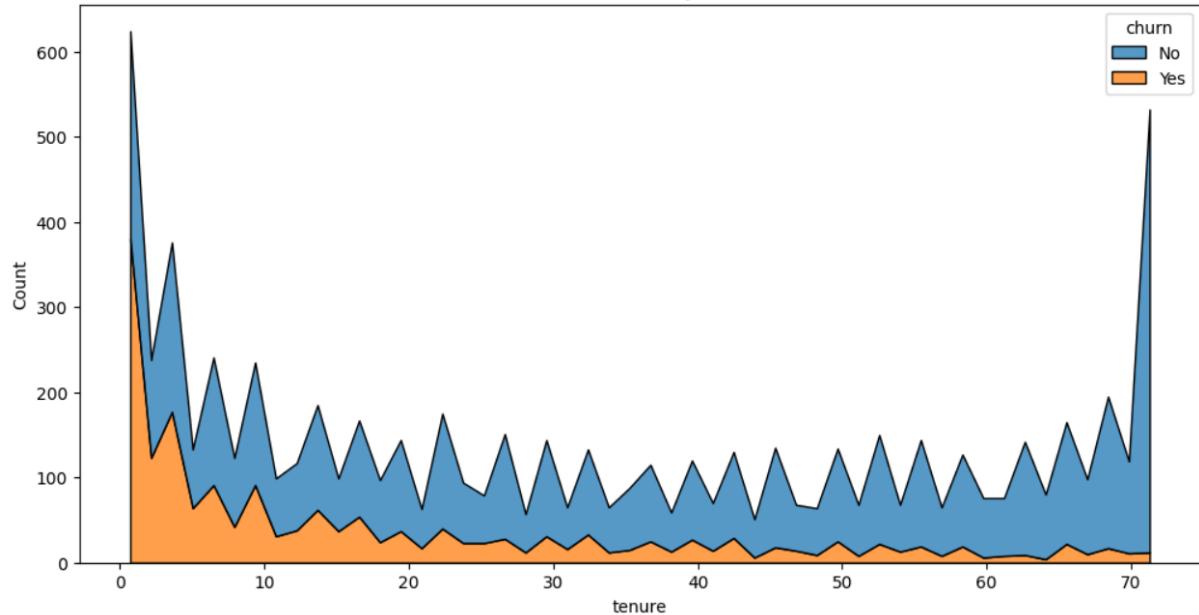
Percentage Distribution of Customer Churn by Senior Citizen Status



## Tenure Analysis

We analyzed the relationship between the length of service (tenure) and retention.

Tenure wise Churn Analysis (Stacked)

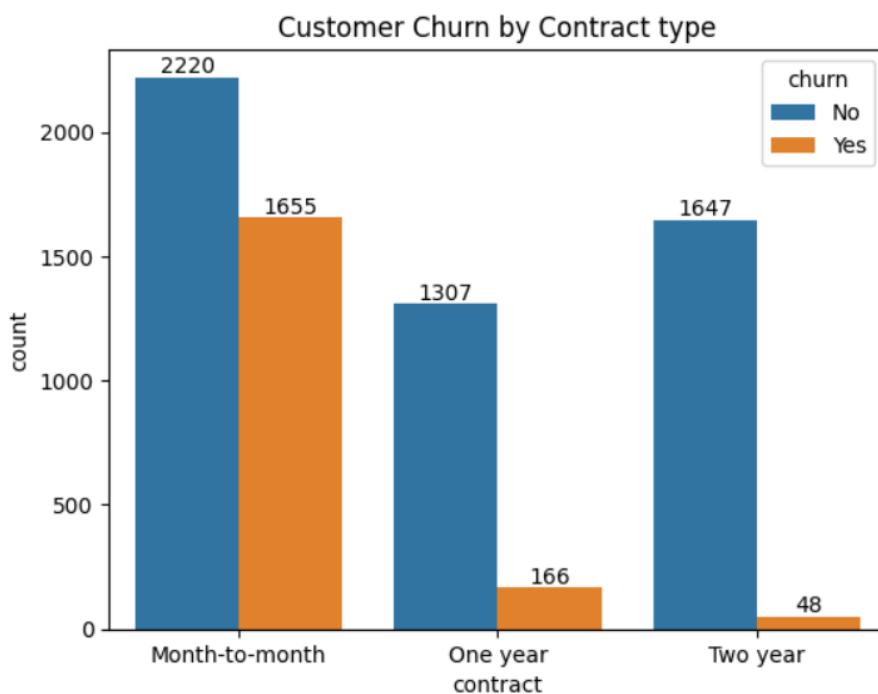


**Finding:** Customers with shorter tenure churn at a significantly higher rate, while long-term customers show greater stability.

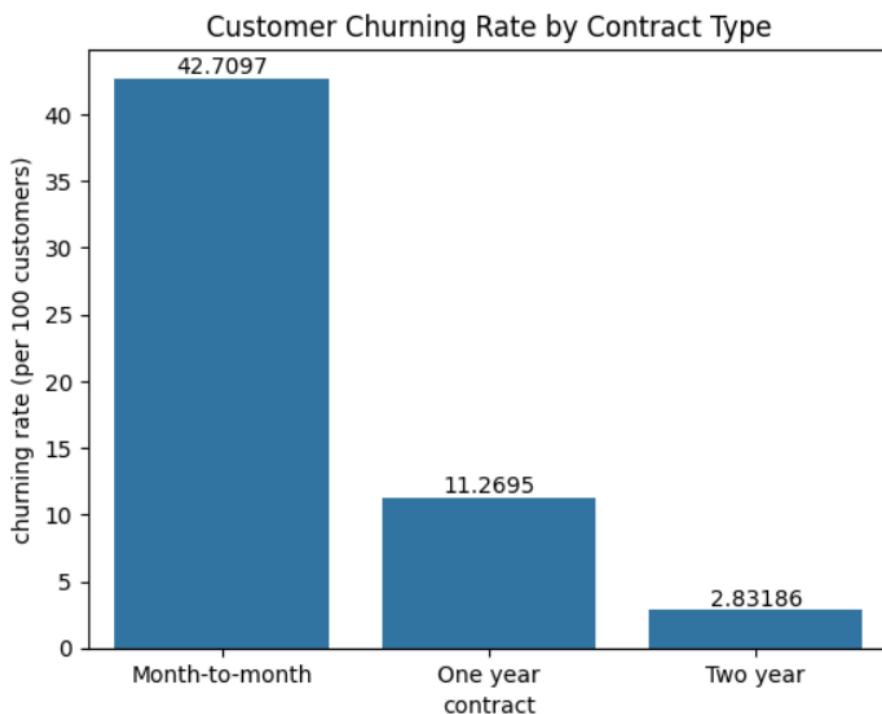


## Contract Type Analysis

This section analyzes churn based on the type of contract (Month-to-month vs. One/Two Year).



Finding: Customers with Month-to-Month contracts have the highest likelihood of churning.

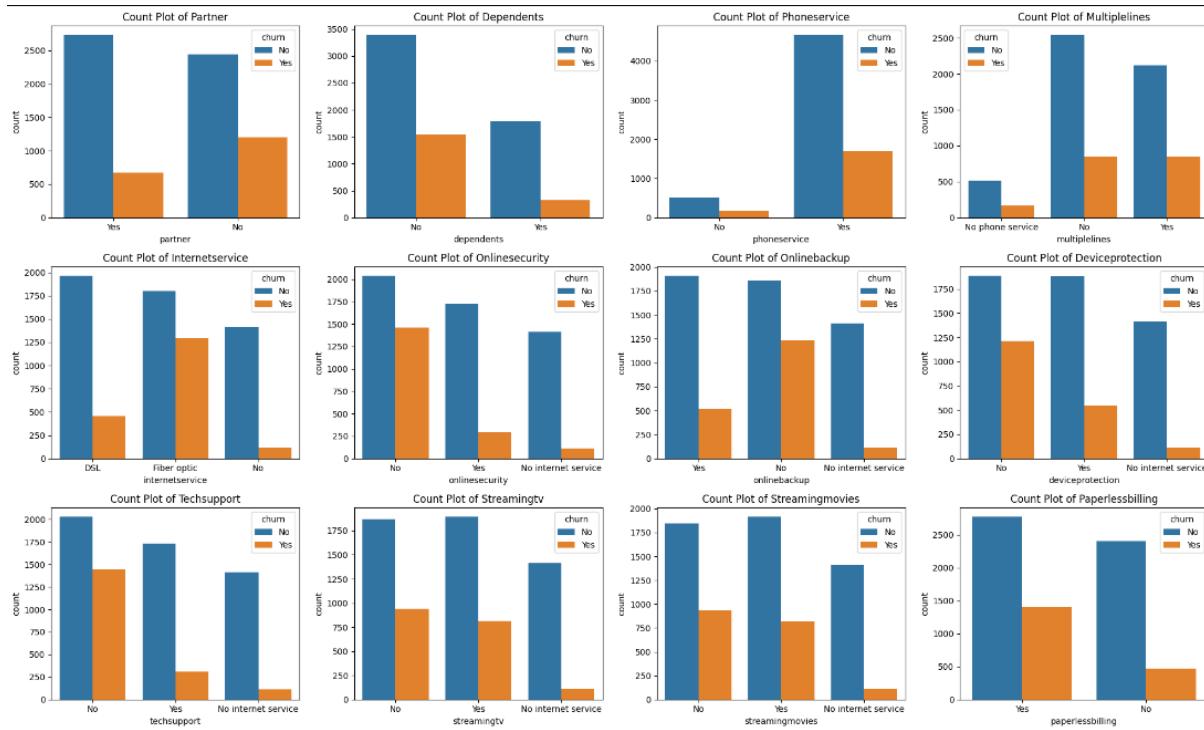


Finding: Customers with One-Year or Two-Year contracts are significantly more stable.



## Service and Category Analysis

We analyzed churn across multiple service and demographic categories (e.g., Partner, Dependents, Online Security, Tech Support).

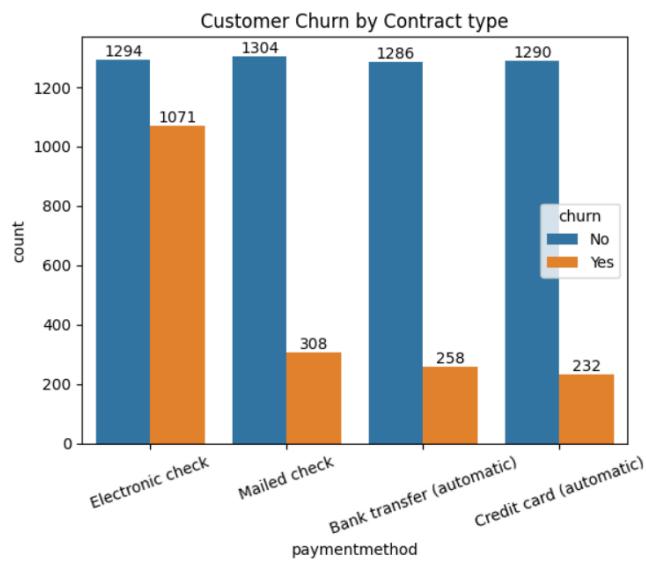


**High Churn Risk:** Customers without Online Security or Tech Support services show higher churn.

**Low Churn Risk:** Customers with partners or dependents tend to have lower churn rates.



## Payment Method Analysis



We examined the impact of different payment methods on customer retention.

**High Risk:** Customers paying via Electronic Check have the highest churn rate.

**Low Risk:** Customers using automatic payment methods (Bank Transfer, Credit Card) have the lowest churn rates.



## Key Conclusions

- **🚫 Primary Churn Drivers:** Month-to-month contracts, usage of electronic checks, short tenure, and lack of tech support/security services
- **✅ Retention Factors:** Long-term contracts (1-2 years) and automatic payment methods significantly improve retention.
- **↗ Strategic Insight:** Promoting value-added services and longer service commitments are key to reducing churn.