

Executive Summary

Customer Churn Analysis Project

Project Objective

The primary objective of this project is to analyze customer churn behavior and identify the key factors influencing customer attrition. By performing Exploratory Data Analysis (EDA) on the customer dataset, this study aims to uncover actionable insights that can help the business reduce churn, improve customer retention, and enhance long-term revenue.

Dataset Overview

The dataset contains customer-level information including:

- Demographics (Gender, Senior Citizen)
 - Account information (Tenure, Contract Type, Payment Method)
 - Service usage (Internet services, security, tech support, streaming)
 - Billing details (Monthly Charges, Total Charges)
 - Target variable (Churn)
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Key Findings & Insights

1. Overall Churn Behavior

A significant portion of customers have churned, indicating that churn is a material business concern rather than a marginal issue. This highlights the need for targeted retention strategies.

2. Tenure as a Primary Churn Driver

Tenure emerged as the **strongest indicator of churn**.

- Customers with **short tenure (0–12 months)** show the highest churn rates.
- Customers with longer tenure demonstrate significantly better retention.
- Boxplot and histogram analysis clearly show churn concentration in the early customer lifecycle.

Insight:

Customer loyalty increases sharply once customers pass the initial engagement phase.

3. Contract Type Impact

- Customers on **month-to-month contracts** churn at much higher rates.
- One-year and two-year contract customers exhibit strong retention.

Insight:

Long-term contracts act as a natural churn prevention mechanism by increasing customer commitment.

4. Payment Method Influence

- Customers using **Electronic Check** have the highest churn rates.
- Automated payment methods (credit card, bank transfer) show lower churn.

Insight:

Ease and automation of payment play a role in customer retention and commitment.

5. Senior Citizen Analysis

- Senior citizens have a **higher likelihood of churn** compared to non-senior customers.
- This suggests potential challenges related to pricing sensitivity, service complexity, or support needs.

Insight:

Specific customer segments require tailored retention strategies.

6. Service Usage & Support

Customers who do not use services such as:

- Online Security
- Tech Support
- Device Protection

tend to churn more frequently.

Insight:

Value-added and support services improve perceived value and reduce churn risk.

7. Pricing & Charges

- Monthly Charges show a moderate relationship with churn.
- Customers with higher charges and shorter tenure are more prone to churn.
- Total Charges are lower for churned customers primarily due to shorter tenure.

Insight:

Early churn directly reduces customer lifetime value (CLV).

8. Correlation Analysis

Correlation among numerical variables revealed:

- Strong positive correlation between **Tenure** and **Total Charges**
- Moderate correlation between **Monthly Charges** and **Total Charges**

Insight:

Tenure-related metrics dominate churn behavior more than pricing alone.

Business Recommendations

1. Strengthen Early Customer Engagement

Since churn is highest during the first year, focus on:

- Improved onboarding experience
- Early-stage customer communication
- First 6-month retention programs

2. Encourage Long-Term Commitments

- Promote annual and multi-year contracts
- Offer discounts or bundled services for long-term plans

3. Improve Support for High-Risk Segments

- Provide dedicated support for senior citizens
- Simplify service usage and billing communication

4. Promote Automated Payment Methods

- Encourage customers to switch to auto-pay options
- Offer incentives for electronic payment automation

Conclusion

The analysis demonstrates that customer churn is strongly influenced by **early tenure, contract type, payment behavior, and service engagement**. By addressing friction points early in the customer lifecycle and encouraging long-term commitment, the business can significantly reduce churn and improve customer lifetime value.

This project provides a data-driven foundation for building predictive churn models and designing targeted retention strategies.