

Customer Churn Analysis Report

Prepared on 2025-08-28

1. Introduction

This report analyzes customer churn patterns for a telecommunications provider. The objective is to quantify the churn rate, understand key drivers of churn, and derive actionable recommendations to improve customer retention.

2. Dataset Description

Total customers: 7043

Churned customers: 1869 (26.54%)

Key variables used in the analysis include Tenure Months, Contract Type, Internet Service, Monthly Charges, Total Charges, and Payment Method.

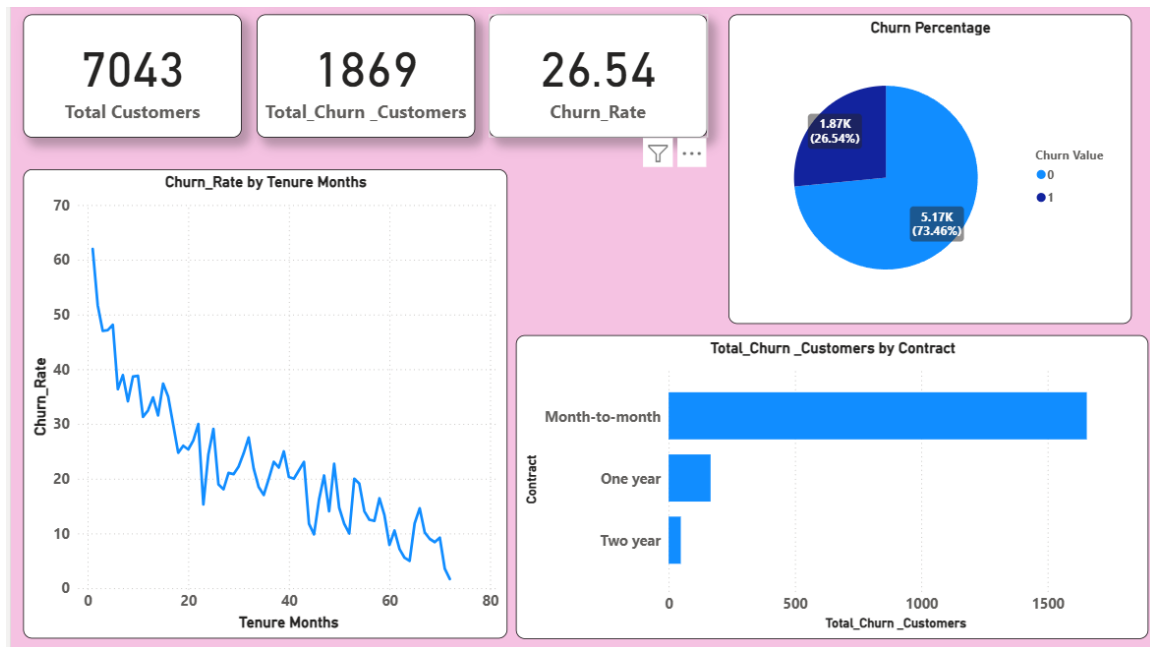
3. Data Preprocessing

- Converted 'Total Charges' to numeric, coercing invalid entries to missing values.
- Filled missing values in 'Churn Reason' with a placeholder.
- Removed duplicate rows.
- Saved the cleaned file as telco_cleaned.csv.

4. Exploratory Data Analysis (EDA)

Overall churn rate is approximately 26%. Churners tend to have higher monthly charges and shorter tenure.

Dashboard snapshot:



4.1 Churned Customers by Contract Type

Contract	Total Churn Customers
Month-to-month	1655
One year	166
Two year	48

4.2 Average Monthly Charges by Internet Service

Internet Service	Avg Monthly Charges
Fiber optic	88.13
DSL	49.08
No	20.37

4.3 Churned Customers by Payment Method

Payment Method	Churned Customers
Bank transfer (automatic)	258
Credit card (automatic)	232
Electronic check	1071

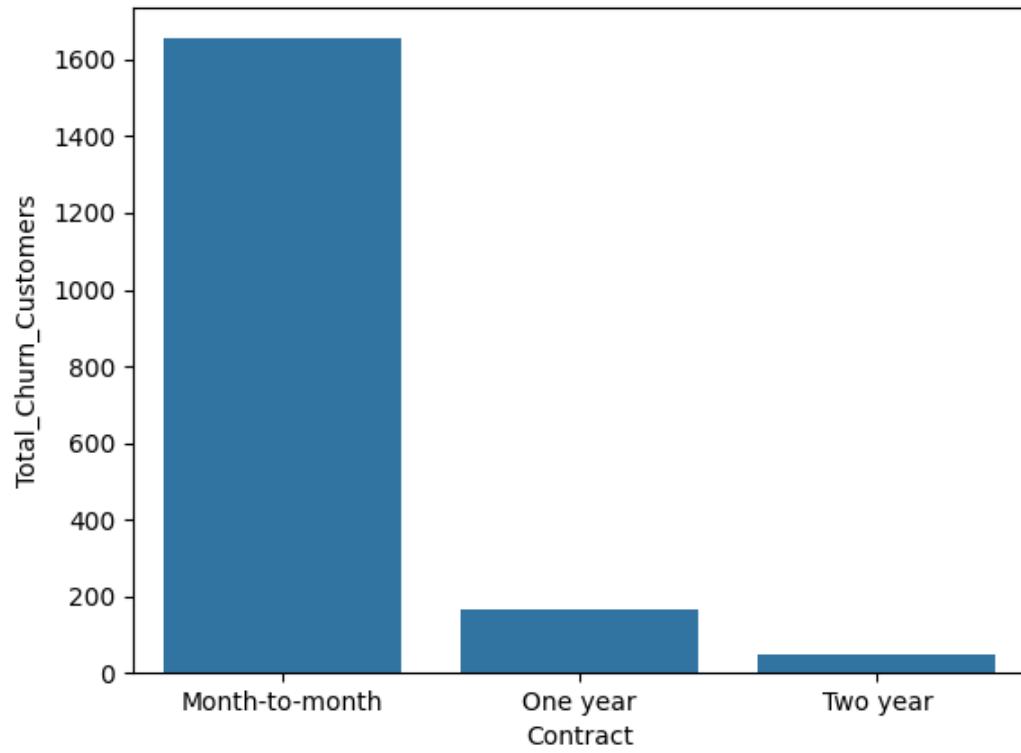
4.4 Tenure Months vs Churn Counts

Churn counts are highest in the earliest tenure months and steadily decrease as tenure increases, indicating early-life churn risk. Below is a sample of the tenure-to-churn mapping used in the analysis.

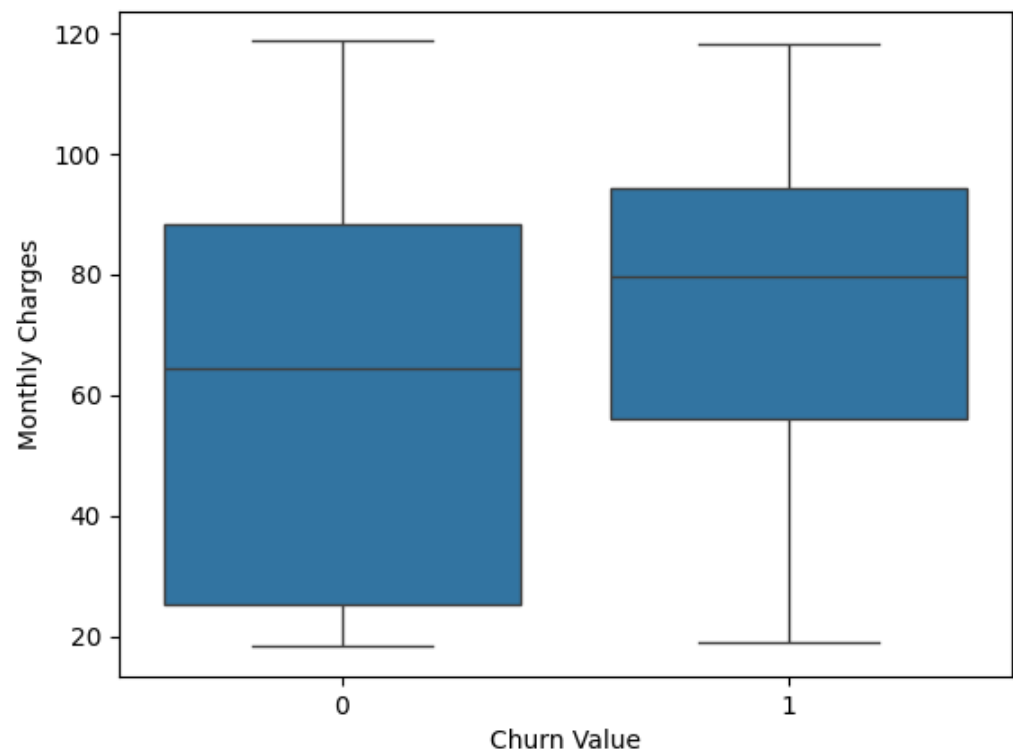
Tenure Months	Churned Customers
1	380
2	123
3	94
4	83
5	64
6	40
7	51
8	42
9	46
10	45
11	31
12	38
13	38
14	24
15	37
16	28
17	26
18	24
19	19
20	18

5. Visuals

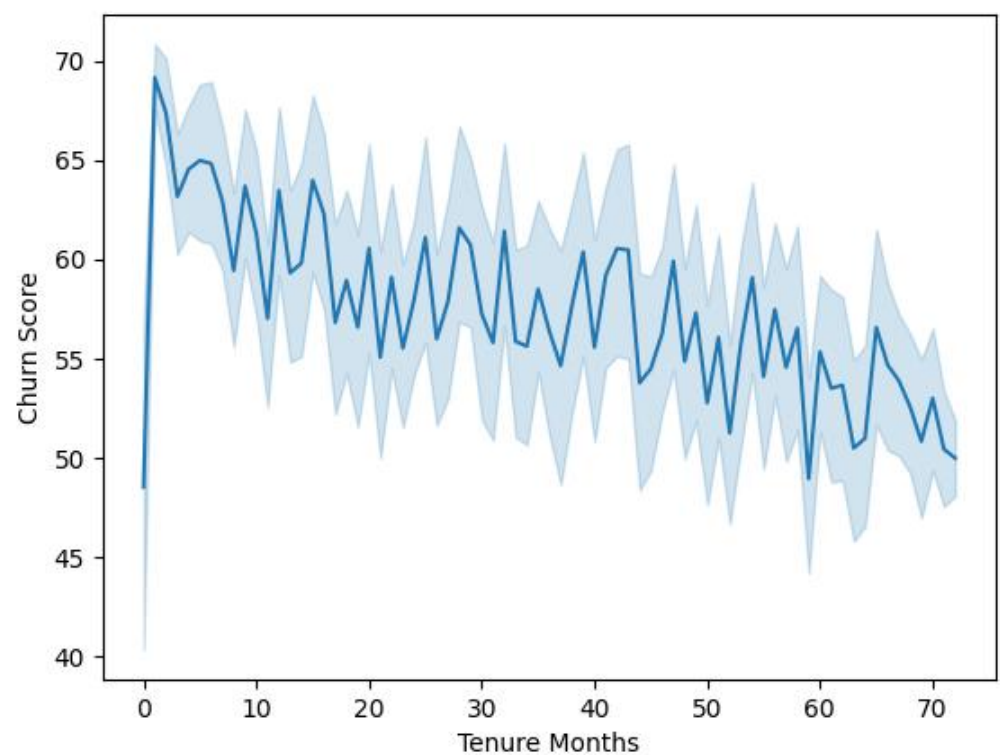
Churn By Contract Type



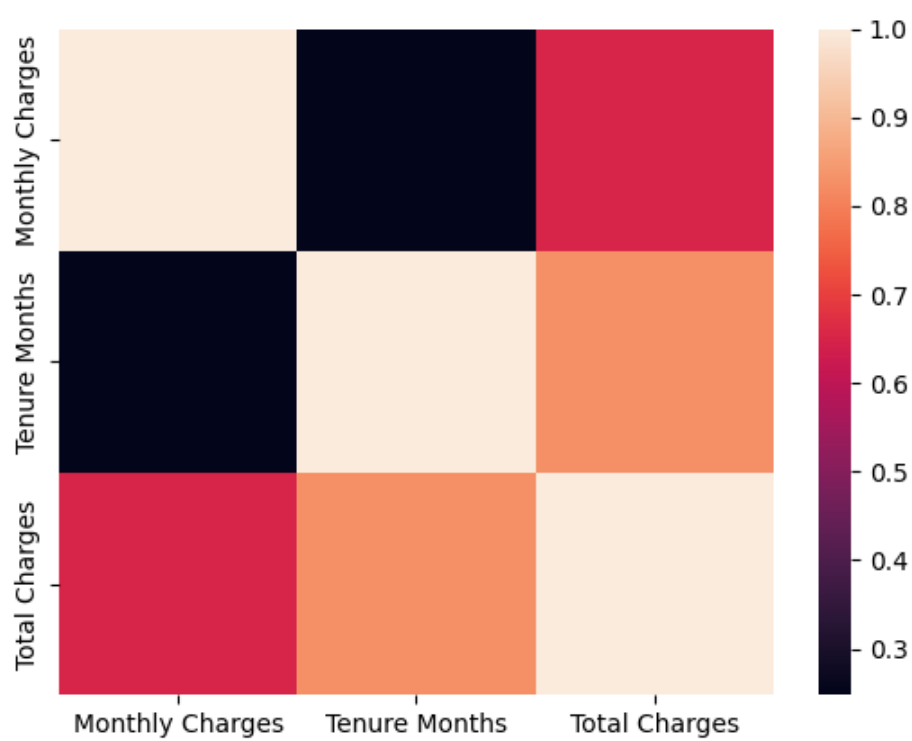
Monthly Charges By Churn



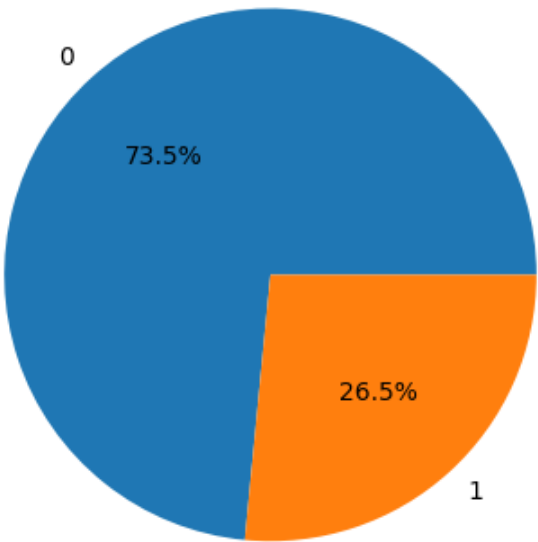
Churn Count By Tenure Months



Correlation Matrix



Churn Distribution



Payment Method	Churn Value
Bank transfer (automatic)	258
Credit card (automatic)	232
Electronic check	1071
Mailed check	308
Grand Total	1869

6.

7. Key Findings

- Short-tenure customers are far more likely to churn.
- Month-to-month contracts dominate churners compared to 1-year and 2-year contracts.
- Higher monthly charges correlate with churn; fiber optic service has the highest average charges among segments.
- Customers paying via electronic check exhibit notably higher churn than other payment methods.