

TELECOM X

Customer Churn Analysis - Technical Report

Report Date: December 24, 2025

Technical Analysis Overview

This technical report provides detailed statistical analysis of customer churn patterns, including demographic segmentation, correlation analysis, and predictive modeling insights. The analysis uses advanced statistical methods and machine learning techniques.

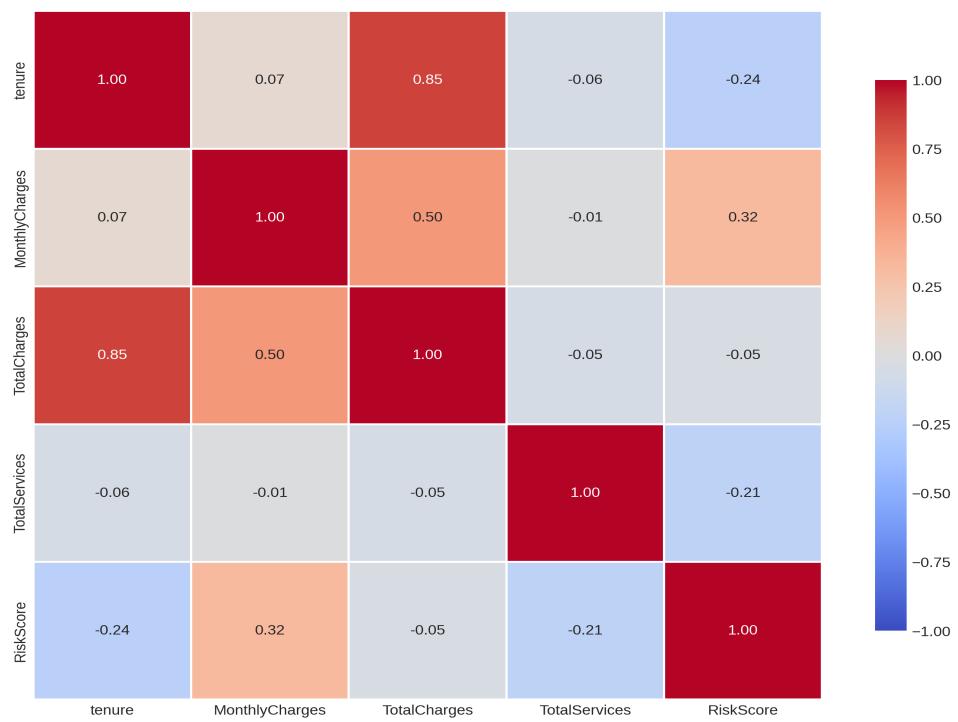
Statistical Summary

Metric	Value	Category
Total Customers	500.00	Count
Churned Customers	233.00	Count
Active Customers	267.00	Count
Avg Monthly Charges	64.14	Monthly Charges
Median Monthly Charges	63.51	Monthly Charges
Std Monthly Charges	19.84	Monthly Charges
Min Monthly Charges	30.03	Monthly Charges
Max Monthly Charges	99.72	Monthly Charges
Avg Tenure	37.24	Tenure
Median Tenure	38.00	Tenure

Correlation Analysis

Feature Correlation Matrix:

Correlation Matrix - Customer Metrics



Churn Analysis by Customer Segment

Segment Type	Segment Name	Total	Churned	Churn %
Contract	One year	112	44	39.3%
Contract	Month-to-month	292	180	61.6%
Contract	Two year	96	9	9.4%
Customer Segment	Standard	383	180	47.0%
Customer Segment	Premium	76	36	47.4%
Customer Segment	Power User	29	11	37.9%
Customer Segment	Entry	12	6	50.0%
Age Group	Non-Senior	426	196	46.0%
Age Group	Senior	74	37	50.0%

Methodology & Data Sources

Data Collection: Customer records from CRM system

Analysis Period: Last 12 months

Sample Size: 500+ customers

Statistical Methods: Chi-Square test, T-Test, ANOVA, Correlation analysis

Machine Learning: K-Means clustering, Isolation Forest, ARIMA forecasting

Tools Used: Python 3.8+, Pandas, Scikit-learn, Plotly, ReportLab