Executive Summary

This exploratory data analysis (EDA) aims to uncover insights into customer behavior, service preferences, and key factors contributing to customer churn. The findings assist business stakeholders in reducing churn and improving customer retention strategies.

Dataset Overview

The dataset consists of 7,043 customer records and includes features such as demographics, account details, service usage, billing information, and a target variable 'Churn'. It is a typical telecom dataset used to predict customer attrition.

Customer Demographics

- Gender Distribution: ~50.5% Male, ~49.5% Female. No significant churn difference observed. - Senior Citizens: 16.2% of customers; churn rate ~41.9% vs. overall ~26.5%. - Dependents & Partners: - With Dependents: churn rate 15.6% - Without Dependents: churn rate 32.1%

Contract and Tenure Analysis

- Contract Types: - Month-to-month: 55% of customers, churn rate 43.9% - One year: 21%, churn rate 11.5% - Two year: 24%, churn rate 2.7% - Tenure: - Customers with <12 months tenure churn at ~50% - Strong negative correlation with churn.

Service Usage and Churn

- Internet Service: - Fiber Optic: churn rate ~44% - DSL: ~19.3% - Online Security: - Without: churn ~47% - With Tech Support: churn ~15%

Billing Insights

- Monthly Charges: - >$80/month: churn ~40% - <$40/month: churn ~10% - Paperless Billing: - Users churn more (33%) vs. non-users (20%)

Overall Churn Rate

- 26.5% of customers churned (approx. 1 in 4), a significant business concern.

Actionable Insights

1. Focus retention on short-contract, fiber users, seniors, and high-charge customers. 2. Offer incentives for longer-term contracts. 3. Bundle tech support and security services to add value. 4. Use targeted offers for paperless billing users.