Executive Summary

Churn Analysis: Exploratory Data Analysis (EDA)

This document presents a comprehensive EDA on customer churn in a telecommunications dataset, focusing on key factors influencing customer retention. The dataset contains 7,043 records and 21 attributes, ranging from demographic data to service usage metrics. Below is a summary of insights derived from the analysis:

Key Findings:

1. **Churn Rate:**
   - Approximately **26.54% of customers have churned**, as identified through pie chart visualizations.

2. **Customer Demographics:**
   - **Gender:** Both male and female customers show similar churn rates, indicating **gender is not a significant factor**.
   - **Senior Citizens:** A higher proportion of senior citizens have churned, suggesting they are a more vulnerable group.

3. **Service Usage:**
   - **Tenure:**
     - Customers with shorter tenures (1-2 months) have a higher churn rate.
     - Long-tenured customers tend to remain loyal.
   - **Internet Services:**
     - Churn rates are higher among customers using **Fiber optic** internet compared to DSL.
   - **Phone Services:**
     - Customers with multiple phone lines exhibit higher churn than those with a single line or no phone service.

4. **Subscription Features:**
   - Non-subscription to features like **OnlineSecurity**, **OnlineBackup**, and **TechSupport** correlates with higher churn rates.
   - Customers who utilize **StreamingTV** and **StreamingMovies** are more likely to churn, possibly due to dissatisfaction or service competition.

5. **Contract Type:**
   o Customers on **month-to-month contracts** exhibit significantly higher churn compared to those with annual contracts.
   o This indicates a need to focus on longer contract offerings to improve retention.

6. **Payment Method:**
   o Churn is higher among customers using payment methods such as **electronic check**, compared to credit card or automatic bank transfer.

Actionable Recommendations:

1. **Retention Strategies:**
   o Offer **incentives for longer contracts** to reduce churn among month-to-month customers.
   o Develop targeted retention campaigns for **senior citizens**, emphasizing personalized support and benefits.

2. **Enhanced Service Bundling:**
   o Encourage subscription to value-added services like **OnlineSecurity** and **TechSupport** by highlighting their importance in customer communications.

3. **Service Quality Improvements:**
   o Investigate and address customer dissatisfaction with **Fiber optic internet** services.

4. **Payment Options:**
   o Promote reliable payment methods like automatic bank transfers to reduce churn associated with electronic checks.