**Summary and Recommendations**

**📌 Objective & Purpose of the Project**

The main objective of this project is to analyze customer behavior and identify key factors that influence churn in the telecom industry. The purpose is to gain valuable insights that help businesses understand why customers leave and build effective retention strategies to reduce churn rates, improve customer satisfaction, and increase revenue.

**📊 Executive Summary - Telecom Customer Churn Analysis**

This project focuses on performing Exploratory Data Analysis (EDA) on the Telecom Customer Churn Dataset, which consists of 7043 records and 21 features related to customer demographics, service usage, payment details, and churn status.

✅ **Key Highlights & Insights**:

* Churn Rate: The dataset reveals that 26.5% of customers have churned, highlighting the need to analyze reasons behind this loss.
* **Tenure Impact**:
  + New customers (tenure less than 12 months) have a churn rate of 45%.
  + Long-term customers (above 60 months) have a churn rate below 10%, proving loyalty increases with time.
* **Service Impact:**
  + Customers without internet services or security add-ons like online backup and device protection churn more.
  + Fiber optic users show a 41% churn rate, indicating dissatisfaction or cost issues.
* **Contract Type**:
  + Month-to-month contracts experience the highest churn at 43%.
  + One-year contracts churn at 11%, and two-year contracts have the least churn at 3%.
* **Payment Method**:
  + Electronic Check users have a 45% churn rate—the highest.
  + Bank Transfer, Credit Card, and Mailed Check users have lower churn between 15%-20%.

**📈 Visualizations:**

I created various charts and graphs to present the insights visually:

* Bar Charts: Churn by contract type, payment method, and internet service.
* Pie Charts: Overall churn percentage and service-based distribution.
* Histograms: Showed the impact of monthly charges and tenure on churn.

🎯 **Conclusion & Recommendations**:

* Critical churn drivers: Short tenure, month-to-month contracts, electronic check payments, and lack of value-added services.
* Recommendations:
  + Encourage longer contracts (1-2 years) with discounts or offers.
  + Provide security services like online backup to reduce churn.
  + Promote auto-payment options over electronic checks.
  + Target new customers with special loyalty programs to reduce early churn.

**✅ Outcome:**These insights will help telecom businesses develop strategies to reduce churn, increase customer retention, and improve profitability.