**Executive Summary: Customer Churn Analysis 2024**

This analysis aims to explore customer churn within a telecommunications company, utilizing a dataset comprising 7,043 customer records. The dataset includes various attributes such as demographics, service usage, and billing information, which are crucial for understanding factors influencing customer retention.

**Key Findings:**

1. **Demographics:**

The dataset includes both male and female customers, with a notable percentage of senior citizens (approximately 16.2%).

Partnerships and dependents among customers vary, impacting churn rates.

1. **Service Usage:**

Customers utilize different types of internet services, including DSL and fiber optic, which correlate with their satisfaction and likelihood to churn.

Features such as online security, device protection, and tech support show varying engagement levels across different customer segments.

1. **Churn Rate:**

The overall churn rate is significant, indicating that approximately 26% of customers have cancelled their service.

Factors contributing to churn include contract types (month-to-month vs. longer-term contracts), with month-to-month customers exhibiting higher churn rates.

1. **Billing Insights:**

Monthly charges range widely, with an average monthly charge of approximately $64.76.

Total charges also vary significantly, suggesting that longer-tenured customers tend to have higher total charges but lower churn rates.

1. **Visual Insights:**

Various charts illustrate trends in churn rates across different demographics and service usage patterns.

Heatmaps and bar charts effectively highlight correlations between customer features and their likelihood to churn.

1. **Demographics: in terms of percentage**

The dataset consists of both male and female customers, with approximately 50.5% male and 49.5% female representation.

Senior citizens constitute about 16.2% of the customer base, indicating a significant segment that may require tailored retention strategies.

Customers with partners make up 48.5%, while those with dependents account for 30.2%.

1. **Service Usage:**

Customers utilize various internet services, with DSL being the most common (about 43%) followed by Fiber optic (approximately 38%).

Features such as online security and tech support show varied engagement: 29% of customers use online security, while only 20% opt for tech support.

The analysis reveals that customers who engage more with these features tend to have lower churn rates.

1. **Churn Rate:**

The overall churn rate is notable, with approximately 26.5% of customers having cancelled their service.

Month-to-month contracts exhibit a significantly higher churn rate of about 40%, compared to long-term contracts (one year or two years) which show churn rates below 10%.

1. **Billing Insights:**

The average monthly charge is approximately $64.76, with monthly charges ranging from a minimum of $18.25 to a maximum of $118.75.

Total charges reflect a similar trend, averaging around $2,279.73, indicating that longer-tenured customers tend to incur higher total charges but also exhibit lower churn rates.

1. **Visual Insights:**

Various charts illustrate trends in churn rates across different demographics and service usage patterns:

Bar charts highlight churn rates segmented by contract type and internet service.

Heatmaps effectively showcase the correlation between customer features (e.g., senior citizen status and service usage) and their likelihood to churn.