● Summary and recommendations

Objective: This analysis aims to identify factors influencing customer churn by using a dataset to explore relationships between demographics, service types, payment methods, and contract types. The goal is to derive actionable insights to reduce customer churn rates.

Key Findings:

1. **Demographic Influence on Churn:**
   - **Senior Citizens:** Approximately **42%** of senior citizens in the dataset have churned, compared to a churn rate of **22%** for non-senior customers. This indicates that senior citizens are nearly twice as likely to churn as younger customers.
   - **Recommendation:** Introduce specialized retention strategies, such as personalized support or discounts for senior citizens, to help lower churn in this demographic.
2. **Contract Type:**
   - **Month-to-Month Contracts:** Customers on month-to-month contracts exhibit the highest churn rate of **44%**. In contrast, customers with annual contracts churn at **11%**, and biennial contract holders at just **3%**. These figures demonstrate a clear trend: longer-term contracts significantly reduce the likelihood of churn.
   - **Recommendation:** Offering incentives for month-to-month customers to switch to longer-term contracts can be an effective retention strategy. Options like discounted rates, bundled services, or loyalty programs can be employed.
3. **Payment Method Impact on Churn:**
   - Customers using **electronic checks** have the highest churn rate at **46%**, compared to just **16%** for those paying via credit card or bank transfer. Customers using mailed checks also show lower churn rates (**23%**).
   - **Recommendation:** Since electronic check users are nearly three times more likely to churn than credit card or bank transfer users, it's advisable to offer incentives for customers to switch to alternative payment methods. For example, a loyalty discount for auto-debit setups using credit cards could be introduced.
4. **Internet Service Type:**
   - **Fiber Optic Service:** Churn among fiber optic users is relatively high, with **41%** of customers leaving. In comparison, **DSL service** users churn at a lower rate of **22%**. This could indicate dissatisfaction with fiber-optic pricing or service quality.
   - **Recommendation:** Investigate customer feedback specific to fiber optic services to identify causes of dissatisfaction. This could lead to improvements in service quality or more competitive pricing strategies.
5. **Tenure and Churn Correlation:**
   - **Tenure Length:** Customers with a tenure of less than 12 months have a churn rate of **50%**, whereas those who have been with the company for over two years show a significantly lower churn rate of **10%**. This strong negative correlation between tenure and churn highlights the importance of customer loyalty.

- ○ **Recommendation:** Develop customer loyalty programs that incentivize longer stays, such as milestone-based rewards, offering premium services, or exclusive discounts after a certain tenure period.

Visualizations:

The analysis includes insightful charts that display churn distribution across various customer segments. Some of the most important visualizations are:

- **Churn by Contract Type:** This bar chart clearly shows the drastic difference in churn rates between month-to-month contracts (high churn) and annual/biennial contracts (low churn).
- **Churn by Payment Method:** A stacked bar chart reveals the significantly higher churn rate for electronic check users, with helpful annotations on each segment to display churn rates by percentage.
- **Churn Among Senior Citizens:** Another chart highlights the elevated churn rate in the senior demographic, reinforcing the need for targeted retention strategies for this group.

Key Statistics:

- **Overall Churn Rate:** The overall churn rate across the entire dataset is **26%**.
- **Churn Rate by Demographic:** Senior citizens churn at a rate of **42%**, while younger customers churn at **22%**.
- **Churn Rate by Service:** Fiber optic service users show a **41%** churn rate, while DSL users churn at a rate of **22%**.
- **Payment Method Impact:** Electronic check users churn at **46%**, compared to just **16%** for credit card/bank transfer users.

Recommendations:

1. **Focus on Payment Methods:**
   - ○ Given the stark difference in churn rates across payment methods, encourage electronic check users to switch to more stable payment methods like credit cards or bank transfers. Offering discounts for switching payment methods or enrolling in auto-pay can help.
2. **Improve Retention for Month-to-Month Customers:**
   - ○ Customers with month-to-month contracts are the most likely to leave, so strategies like promotional offers, extended trial periods for annual contracts, or loyalty bonuses after a certain tenure should be considered to lock them into longer-term contracts.
3. **Targeted Offers for Senior Citizens:**
   - ○ Since senior citizens are nearly twice as likely to churn, specialized retention programs, including dedicated customer service and senior-friendly packages, may help reduce churn in this demographic.
4. **Investigate Fiber Optic Service Issues:**
   - ○ The high churn rate among fiber optic service users suggests potential service quality issues. A customer feedback survey could identify specific

problems, allowing the company to make data-driven improvements to reduce churn.

5. **Loyalty Incentives Based on Tenure:**
   - Customers with longer tenures churn significantly less. Implementing loyalty programs, where customers earn rewards for staying with the service, such as discounts, exclusive offers, or enhanced customer support, could be valuable.