Summary & Recommendation

i) Objective

- To evaluate customer churn patterns across **7,043 telecom customers** using demographic, contractual, service, and payment-related data.

- To identify **primary churn drivers** and quantify their impact using **percentage-based performance indicators**.

- To leverage analytical visualizations to support **strategic retention initiatives and revenue protection decisions**.

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ii) Key Insights

a) Contract Type

- Customers on **month-to-month contracts demonstrate the highest churn rate at approximately 42–45%**, indicating low commitment and high switching propensity.

- **One-year contract customers** show a substantially lower churn rate of **~11–13%**, while **two-year contract customers exhibit the strongest retention**, with churn limited to **~3–5%**.

- Despite representing a smaller share of long-term customers, **month-to-month users account for over 85% of total churn volume**.

- This establishes **contract tenure as the single most influential factor in customer retention**, emphasizing the commercial value of long-term contract conversion strategies.

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b) Payment Methods

- Customers using **electronic check payments show the highest churn rate (~44–46%)**, making this payment channel the most vulnerable.

- **Mailed check users** demonstrate moderate churn levels at **~19–21%**.

- Customers enrolled in **automatic bank transfer or credit card payments** exhibit significantly lower churn rates of **~15–17%**, reflecting greater financial and behavioral stability.

- **Paperless billing customers churn at nearly double the rate (~33–34%)** compared to customers using traditional billing methods (**~16–18%**).

- These findings suggest that **automated payment adoption is strongly associated with improved customer retention**, while digital-only billing users may display higher price sensitivity.

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iii) Churn Rate by Tenure

- Churn is **most pronounced in the early stages of the customer lifecycle**:

    - Customers with **0–2 months tenure experience churn rates exceeding 50%**, representing a critical risk period.

- Churn decreases consistently as tenure increases:

    - **3–6 months:** ~35–40%

    - **6–12 months:** ~25–30%

    - **12–24 months:** ~10–15%

    - **Beyond 24 months: <5%**

- Long-tenured customers demonstrate **strong loyalty, reduced price sensitivity, and higher lifetime value**.

- The data clearly indicates that **early onboarding experience and first-quarter customer engagement are decisive in long-term retention outcomes**.

iv) Visualization

- **Contract-wise and payment-wise bar charts** clearly highlight high-churn segments through percentage-based comparisons.

- **Tenure-based trend visualizations** illustrate a strong inverse relationship between customer longevity and churn probability.

- **Service adoption charts** show that customers without **online security, backup, or technical support services experience 30–40% higher churn**.

- Customers using **fiber optic internet exhibit churn rates of ~30–35%**, higher than DSL users, suggesting a potential mismatch between pricing, expectations, and perceived service value.

- Overall, the visual analytics provide **clear, executive-friendly insights**, enabling rapid identification of risk areas and prioritization of retention initiatives.

Business Implication

- The analysis confirms that **contract structure, payment behavior, and early-stage customer experience** are the primary levers for churn reduction.

- Strategic focus on **long-term contracts, automated payments, and enhanced early engagement** can materially improve retention and protect recurring revenue.