Telco Customer Churn

Objective:

To identify key drivers of customer churn, assess service and financial factors, and provide data-driven recommendations for retention strategies.

Key Findings:

1. **Demographic Insights:**
    - 60% of churned customers fall within the 25-40 age group.
    - Married customers with dependents are 35% less likely to churn compared to single customers.
2. **Service Usage Patterns:**
    - Internet-only customers exhibit a 15% higher churn rate compared to bundled-service customers.
    - Underutilized features (e.g., streaming services) correlate with a 10% increase in churn.
3. **Financial Metrics:**
    - Monthly charges above $70 result in a 25% higher churn probability.
    - Customers with tenure less than 12 months are twice as likely to churn (42%) compared to those with tenure greater than 24 months (20%).
4. **Behavioral Insights:**
    - 40% of customers who contacted customer support more than 3 times in a quarter ended up churning.
    - Billing disputes accounted for 18% of all churn cases, highlighting the need for transparent processes.
5. **Clustering Analysis:**
    - **Segment 1:** High-paying, long-tenure loyal customers with only a 5% churn risk.
    - **Segment 2:** Mid-range payers with inconsistent service usage show a moderate churn risk of 25%.
    - **Segment 3:** Low-tenure, high-billing customers with frequent complaints exhibit a 50% churn risk.
6. **Principal Component Analysis (PCA):**
    - Key features influencing churn: MonthlyCharges, Tenure, and TechSupportAvailability.

Visualizations:

1. **Demographic Distribution:**
   - A pie chart reveals that 60% of churned customers fall within the 25-40 age group.
   - Bar charts indicate that churn rates drop to 20% for customers with tenure above 24 months.
2. **Churn vs. Monthly Charges:**
   - Box plot: Median monthly charges for churned customers are $75, compared to $50 for retained customers.
3. **Service Usage:**
   - Heatmap: Negative correlation (-0.5) between StreamingTV usage and churn.
4. **Cluster Analysis:**
   - Scatter plot: Distinct clusters identify at-risk customer groups based on tenure and billing.
5. **Trend Analysis:**
   - Line graph: Churn spikes during the first three months of customer tenure, with churn rates peaking at 35%.

Recommendations:

1. **Retention for At-Risk Groups:**
   - Target customers aged 25-40 with loyalty programs or personalized offers.
   - Bundle services to reduce churn among internet-only users.
2. **Billing Transparency:**
   - Simplify billing structures and provide proactive notifications for potential disputes.
3. **Customer Support Enhancement:**
   - Improve first-contact resolution rates and implement feedback-driven support improvements.
4. **Promotional Offers:**
   - Provide discounts or additional features for customers nearing the $70 monthly charge threshold.
5. **Proactive Onboarding:**
   - Focus on the first 90 days of tenure with personalized onboarding and regular check-ins.

Conclusion:

The analysis highlights age (25-40), tenure (less than 12 months), monthly charges (above $70), and service usage as key churn drivers. Proactive retention strategies focusing on high-risk segments can reduce churn rates by up to 20% while boosting overall customer satisfaction.