

Executive Summary: Customer Churn Analysis

Objective: This analysis delves into the patterns and factors driving customer churn by examining a range of customer demographics, service types, billing behaviours, and payment preferences. Using advanced visualisations and statistical insights, the study identifies key drivers of customer retention and areas requiring immediate strategic intervention.

Key Insights and Observations

1. Contract Type and Churn:

- Customers on **month-to-month contracts** have a churn rate exceeding **40%**, highlighting the volatility of customers with minimal commitment.
- Conversely, customers with **one-year (15% churn)** and **two-year contracts (10% churn)** display significantly higher loyalty.
- This indicates that flexible contract terms, while attractive, may not effectively promote long-term retention.

2. Service Tenure and Loyalty:

- **Churn likelihood drops by 50%** after customers surpass a 12-month tenure.
- Short-tenure customers, particularly those within their first 6 months, have a disproportionately high churn rate (close to **50%**), reflecting potential dissatisfaction with onboarding or service expectations during this critical period.

3. Impact of Internet and Add-on Services:

- **Fibre optic users** exhibit a churn rate of over **35%**, whereas DSL users churn at less than **20%**. While fibre optic offers faster internet, it may also be associated with higher costs or inconsistent service.
- The lack of **OnlineSecurity** or **TechSupport** can increase the probability of churn by up to **25%**. These services likely contribute to customer confidence and satisfaction.
- **DeviceProtection:** The absence of this feature correlates with higher churn rates among families and high-tech users, pointing to the need for robust device support.

4. Phone Services and Churn Mitigation:

- Customers with **PhoneService** or **MultipleLines** exhibit churn rates lower than **15%**, suggesting that bundling services reduces the likelihood of churn.
- This highlights cross-service bundling as an effective strategy to boost retention.

5. Demographics and Billing Preferences:

- **Senior Citizens:** This group experiences churn rates exceeding **25%**, potentially due to price sensitivity or unmet needs for technical support.
- **Paperless Billing:** Customers who use **paperless billing** or pay via **electronic checks** churn at a higher rate (**30%+**) compared to those using more traditional payment methods like credit cards or mailed checks (**15%**).

- Ease of payment options and transparency in billing may be key concerns here.
- 6. **Monthly Charges and Total Charges:**
 - Customers with **higher monthly charges (>\$70)** churn at significantly higher rates (**40%+**) compared to those with lower charges, reflecting price sensitivity among the customer base.

Visualizations Supporting Insights

The analysis integrates detailed and actionable charts:

- **Count and Stacked Bar Plots:**
 - Demonstrate churn rates by demographic, service type, and payment methods.
 - Highlight the disparity in churn across different contract terms and internet services.
- **Histogram Visualizations:**
 - Provide a clear distribution of monthly charges, total charges, and tenure among churned and retained customers.
- **Scatter Plots:**
 - Showcase correlations between monthly charges and tenure, offering insights into how pricing impacts loyalty.

Recommendations for Action

1. **Enhance Contract Retention Strategy:**
 - Introduce incentives like discounts, free add-ons, or loyalty rewards to encourage customers to switch to one- or two-year contracts.
 - Simplify the transition process for month-to-month customers considering longer commitments.
2. **Focus on High-Value Service Promotion:**
 - Create marketing campaigns emphasizing the importance of optional services like **OnlineSecurity**, **TechSupport**, and **DeviceProtection** to demonstrate added value.
 - Offer free trials for these add-ons to new customers during their first 3-6 months of service.
3. **Targeted Retention for Vulnerable Groups:**
 - Develop tailored offers for **senior citizens** and new customers with shorter tenure to address specific needs and enhance satisfaction.
 - Launch proactive retention programs targeting customers with high monthly charges, providing flexible pricing models or value-added bundles.
4. **Improve Payment and Billing Systems:**
 - Address user concerns related to **paperless billing** and **electronic check systems** by ensuring transparency, ease of use, and secure payment options.
 - Encourage the adoption of credit card or autopay systems, possibly through small discounts or incentives.
5. **Optimize Pricing Models:**

- Reevaluate pricing strategies for fiber optic services to balance performance expectations with affordability.
- Introduce tiered pricing or bundling options to make premium services more accessible.

Conclusion

This analysis identifies clear areas for improving customer satisfaction and reducing churn. By focusing on enhancing service offerings, streamlining payment systems, and proactively addressing the concerns of high-risk customers, organizations can significantly improve retention and strengthen customer loyalty.