**Customer Churn Analysis**

**Project Resources**

* **GitHub Repository:** <https://github.com/bhushan-zade/Customer_Churn_Analysis>
* **Dataset Source:** <https://www.kaggle.com/datasets/blastchar/telco-customer-churn>

**Project Objective**

The objective of this project is to analyze customer churn trends and factors influencing customer retention across multiple dimensions, including demographics, payment methods, service preferences, and regional variations. The insights help businesses improve customer retention strategies, optimize services, and maximize profitability.

**Project Summary**

The project uses a rich dataset of customer attributes, including gender, age, contract type, payment methods, services subscribed, tenure, and regional factors. Key insights are extracted through Power BI visualizations and detailed reporting, enabling clear identification of churn patterns.

**Key Insights**

1. **Churn Overview:**
   * **Total Customers:** 6,418.
   * **New Joiners:** 411.
   * **Total Churn:** 1,732 customers, equating to a churn rate of 27%.
2. **Demographic Insights:**
   * **Gender Breakdown:**
     + Female: 1,111.
     + Male: 621.
   * **Age Group Churn Rates:**
     + Below 20: Lowest churn.
     + 20-35 and 36-50: Highest churn percentages.
3. **Payment Method Impact:**
   * **Credit Card:** 14.8% churn.
   * **Bank Withdrawal:** 34.4% churn.
   * **Mailed Check:** Highest churn at 37.8%.
4. **Contract Duration Impact:**
   * **Monthly Contracts:** Highest churn rate at 46.5%.
   * **One-Year Contracts:** Moderate churn at 11%.
   * **Two-Year Contracts:** Lowest churn at 2.7%.
5. **Regional Churn Trends:**
   * **States with High Churn Rates:** Jammu & Kashmir (57.2%), Assam (38.1%), Jharkhand (34.5%).
6. **Service Preferences:**
   * Customers with **Streaming Services** (TV, Movies, Music) show higher churn rates.
   * Lack of **Online Security** correlates with higher churn.
7. **Internet Usage:**
   * Customers with **Fiber Optic** connections exhibit the highest churn at 41.1%, likely due to competition.

**Report Highlights**

1. **Customer Demographics:**  
   Detailed visualizations of gender, age, and marital status distributions.
2. **Contract and Payment Analysis:**  
   Churn heavily influenced by contract types and payment preferences.
3. **Service Analysis:**  
   Trends in data usage, streaming services, and additional support subscriptions reveal actionable insights for retention.
4. **Geographical Analysis:**  
   Regional churn trends identified using heatmaps and bar charts.
5. **Predictive Analysis:**  
   Power BI visualizations used to predict potential churners and provide actionable recommendations.

**Business Recommendations**

1. **Promote Longer-Term Contracts:**  
   Incentivize customers to choose annual or biennial contracts to reduce churn.
2. **Enhance Payment Flexibility:**  
   Focus on improving the churn experience for mailed checks and introducing automated payment options.
3. **Targeted Customer Retention Campaigns:**  
   Develop region-specific campaigns in high-churn states such as Jammu & Kashmir, Assam, and Jharkhand.
4. **Improve Service Quality:**  
   Address dissatisfaction in streaming services and provide value-added benefits for online security and backup options.

**Technical Overview**

1. **Data Preparation:**
   * Data loaded and cleaned in Power BI.
   * Standardized customer IDs and corrected missing values.
2. **Visualization Techniques:**
   * Multi-layer dashboards for demographics, contracts, and services.
   * Predictive analytics with customer churn likelihood visualization.
3. **Statistical Metrics Used:**
   * Churn rate calculations.
   * Customer segmentation based on services and tenure.

**Conclusion**

The Churn Analysis project offers a comprehensive view of customer behaviour and churn trends. The actionable insights provided can help businesses develop better retention strategies, optimize service offerings, and improve customer satisfaction. With advanced Power BI visualizations and data-driven metrics, this project provides a robust foundation for informed business decision-making.

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