Customer Churn Analysis – Summary Report

Objective

The primary objective of this analysis was to understand the **key factors influencing customer churn** in the company's telecom services. Using Exploratory Data Analysis (EDA) on the company's customer dataset, various service-related and demographic parameters were examined to identify patterns and trends that contribute to customer attrition.

Data Preparation

- The dataset was first cleaned and pre-processed by handling missing values, correcting data inconsistencies, and converting data types where necessary.
- Irrelevant or duplicate records were removed to ensure the accuracy of insights.
- The variable **"Churn"** was used as the dependent feature to distinguish between customers who **stayed (No)** and those who **left (Yes)**.

Overall Churn Distribution

- Out of all customers analyzed, approximately **26–27%** have churned, while **73–74%** remain with the company.
- This indicates that roughly **1 in 4 customers** discontinue their service, representing a significant proportion worth addressing.

Demographic Analysis

- **Gender:-**
  The churn rate among males and females is nearly identical, suggesting **no significant relationship between gender and churn behavior**.
- **Senior Citizens:**-
  Senior citizens (aged 65 years and above) have a **notably higher churn rate (around 42%)**, compared to **about 23% among non-senior customers**.
  This suggests that elderly customers may face more service issues, find it difficult to adapt to new technologies, or are more price-sensitive.

Customer Tenure

- A clear negative relationship exists between **tenure and churn rate**.
- Customers with a **tenure below 12 months** show the highest churn rates, exceeding **45%**.
- Conversely, those with **tenure greater than 2 years** have churn rates below **10%**.
- This trend indicates that **customer loyalty strengthens with longer association** and that early-stage engagement is critical for retention.

Contract Type

- **Month-to-month contracts** show the **highest churn rate (approximately 43%)**.
- Customers with **one-year or two-year contracts** exhibit **significantly lower churn (below 15%)**.
- This implies that **long-term contract commitments help reduce churn**, likely due to increased stability and customer satisfaction.

Internet Service Type

- Among internet users:
  - **Fiber optic customers** have the **highest churn rate (around 31–33%)**.
  - **DSL customers** show a **lower churn rate (below 20%)**.
- Customers with **no internet service** rarely churn, as their interaction level with the company is minimal.
- This insight suggests that **fiber-optic users may be facing service quality or cost-related concerns** that require further investigation.

Additional Services

- Customers who subscribe to **value-added services** such as:
  - **Online Security**
  - **Online Backup**
  - **Device Protection**
  - **Tech Support**

  exhibit **considerably lower churn rates (under 20%)**.
- In contrast, those **without these additional services** experience **churn rates above 35–40%**.
- This indicates that **bundled service offerings and technical support play a crucial role in customer retention**.

Streaming Services

- Customers using **Streaming TV or Streaming Movies** tend to have **slightly lower churn (around 22–25%)** compared to non-streaming users.
- Entertainment features may therefore enhance overall customer satisfaction and engagement, reducing churn probability marginally.

Payment Method

- **Electronic check users** record the **highest churn rate (approximately 45%)**.
- In contrast, customers who use **credit cards, bank transfers, or automatic payments** show **lower churn (15–20%)**.
- This suggests that **convenience, automation, and perceived payment reliability** contribute positively to retention.

Key Takeaways

- **Short-term contracts, lack of additional services, and payment inconvenience** are primary drivers of churn.
- **Fiber optic users and senior citizens** represent two groups at higher risk of leaving.
- **Customer retention** can be significantly improved by:
    - Encouraging **long-term contracts**
    - Offering **service bundles or loyalty packages**
    - Improving **customer support quality**
    - Promoting **automated payment options**

Conclusion

- The EDA highlights that customer churn is influenced by a combination of **service experience, contract structure, and customer engagement**.
- To minimize churn, the company should focus on **enhancing service quality, offering customized retention plans, and building stronger long-term relationships** through loyalty programs and proactive customer support

Report Prepared and Analyzed by :-
Mrinmoy Talukdar

For any Queries :-
mrinmoytalukdergcu@gmail.com