

Telco Customer Churn: A Comprehensive EDA & Insights Report



Introduction

Customer churn is a critical challenge for telecom companies, as retaining existing customers is more cost-effective than acquiring new ones. This analysis aims to identify the key factors influencing customer churn in a telecom company using exploratory data analysis (EDA). By examining customer demographics, subscription details, and service usage, we can derive actionable insights to reduce churn.

Objective

- Identify the primary reasons behind customer churn.
- Analyze customer behavior based on contract type, payment methods, billing preferences, and additional services.

- Provide data-driven recommendations for churn reduction.

Key Insights from EDA

Overall Churn Rate:

- The dataset exhibits a churn rate of approximately **26%**, indicating that over a quarter of the customers have discontinued the service.

Factors Driving the Highest Churn

1. Contract Type:

- Customers with **Month-to-Month contracts** have the highest churn rate (**~42% churned**), significantly higher than those on **one-year (~11%) or two-year (~3%) contracts**.
- This indicates that long-term contracts contribute to customer retention.

2. Payment Method:

- Customers using **Electronic Check payments** exhibit the highest churn (**~45% churned**), compared to Credit Card (~16%) and Bank Transfers (~22%).
- Electronic check users might face payment failures or lack automated renewal options.

3. Billing Preferences:

- Customers with **Paperless Billing** have a **higher churn rate (~32%)** than those receiving paper bills (~16%).
- This could be related to **electronic check payments**, possibly leading to billing dissatisfaction or confusion.

4. Internet Service Type:

- Customers using **Fiber Optic** internet churn more (**~35%**) than DSL (~19%).
- This may be due to service reliability issues or cost factors associated with fiber optic.

5. Additional Services (Security, Backup, Tech Support):

- Customers **without Online Security, Backup, and Tech Support** churn more.
- For example, customers without **Tech Support have a churn rate of ~40%**, whereas those with it churn at **~16%**.
- This suggests that bundled services increase retention.

6. Demographics:

- **Senior citizens churn at a higher rate (~41%)** compared to younger customers (~23%).
- This could be due to cost sensitivity or lower tech adoption.

Conclusion

- The highest churn is observed in **month-to-month contract users, electronic check payers, and fiber optic subscribers**.
- Lack of additional services like **security, tech support, and backup** contributes to higher churn.
- Paperless billing and electronic payments seem to correlate with higher churn, possibly indicating billing dissatisfaction.

Future Scope & Recommendations

- **Encourage long-term contracts:** Offer discounts or benefits for annual/two-year contract upgrades.
- **Improve payment experience:** Address electronic check issues and promote seamless auto-payment options.

- **Enhance customer support & engagement:** Educate users on paperless billing benefits and service quality improvements.
- **Personalized retention strategies:** Offer customized service bundles and discounts to high-risk churn customers.