

Customer Churn EDA – Summary

The objective of this analysis was to understand customer churn patterns and identify the key factors contributing to churn.

Data Cleaning & Preparation

- Missing values in **TotalCharges** were replaced with **0**, as these records corresponded to customers with **tenure = 0**.
- The **TotalCharges** column was converted to the correct numeric data type.
- The **SeniorCitizen** column values were transformed from **0/1** to **Yes/No** to improve interpretability.

Overall Churn Insight

- From the churn distribution (pie chart), **26.54% of customers have churned**, indicating a significant retention challenge.
- This justifies deeper analysis to understand churn drivers.

Demographic Insights

- **Senior Citizens show a comparatively higher churn rate** than non-senior customers.
- This suggests that age-related factors (pricing sensitivity, service complexity, or support needs) may influence churn.

Tenure-Based Analysis

- Churn is **significantly higher among customers with low tenure**.
- As tenure increases, churn decreases, indicating that long-term customers are more likely to stay.
- This highlights the importance of the **first few months of customer engagement**.

Key Takeaways

- Early-stage customers are at the highest risk of churn.
- Senior citizens form a vulnerable customer segment with higher churn probability.
- Improving onboarding experience, targeted retention strategies, and customized support for high-risk segments could help reduce churn.

Conclusion

The analysis shows that churn is not random—it is strongly associated with **tenure and customer demographics**. Focused retention efforts during the initial customer lifecycle and for senior citizens can significantly improve overall customer retention.