

**Predicting Customer Churn in
Telecom Industry using Power BI
and SQL**

Final Project

Subiksha S | MBE 11



Introduction

Business Use Cases:

1. **Customer Retention:** Identify at-risk customers and proactively implement retention strategies.
 2. **Marketing Campaigns:** Tailor marketing efforts towards customers who are more likely to churn.
 3. **Service Improvement:** Analyze churn patterns to improve service offerings and customer support.
 4. **Revenue Optimization:** Reduce churn rates to maintain a steady revenue stream.
 5. **Customer Segmentation:** Segment customers based on churn probability to offer personalized experiences.
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Problem statement

- Customer churn refers to the phenomenon where customers stop using a company's services and switch to a competitor or cease usage entirely.
 - In the highly competitive telecom sector, customer churn significantly impacts revenue, as acquiring new customers is often more expensive than retaining existing ones.
 - High churn rates lead to substantial revenue loss. For telecom companies, reducing churn by even a small percentage can lead to significant profit increases.
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Project Overview

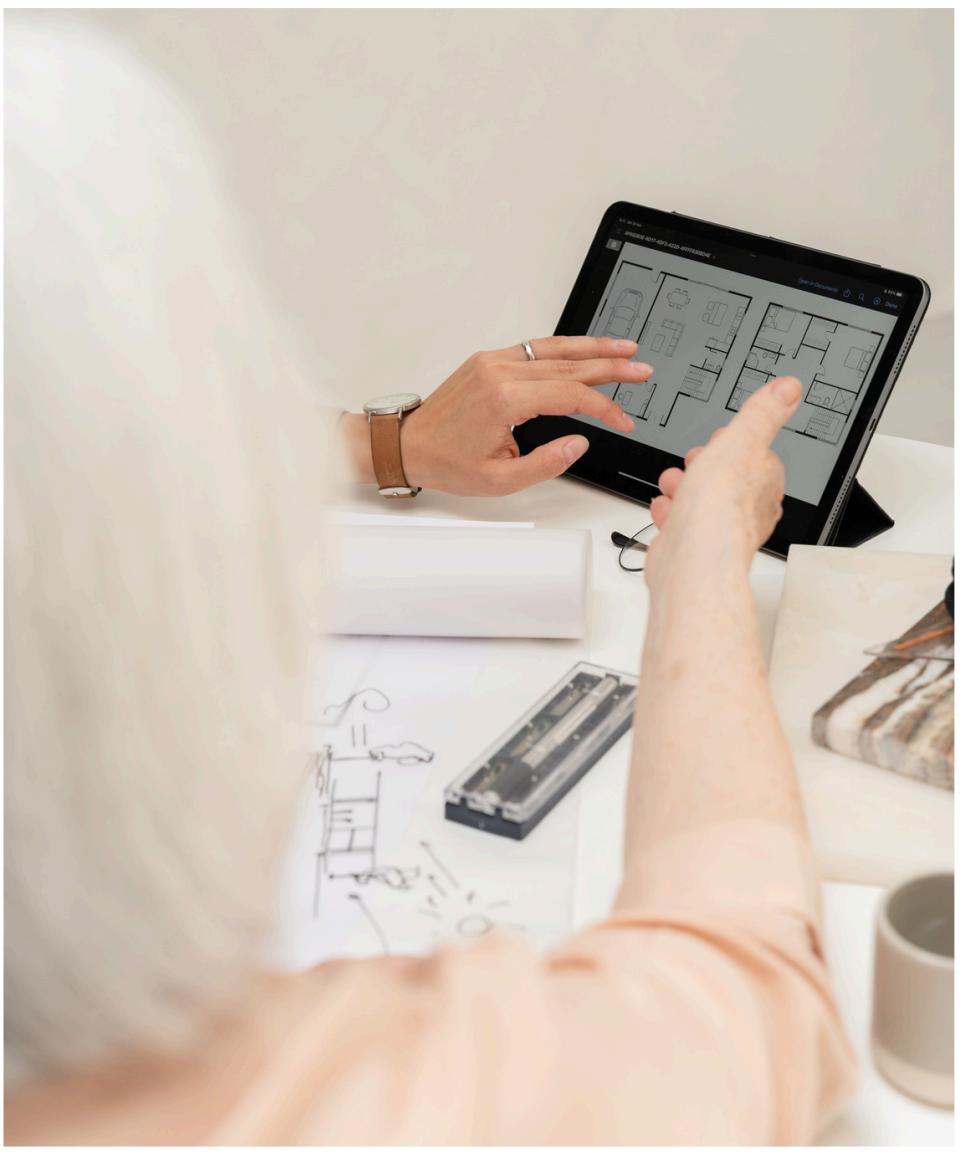
In today's competitive telecom industry, retaining customers has become more challenging due to the abundance of options available to consumers. This project aims to predict and analyze customer churn, enabling telecom companies to take proactive measures to reduce customer attrition.

The project involves using telecom customer data to identify key factors contributing to churn and to create data-driven strategies for customer retention. Through this analysis, we aim to gain a deeper understanding of customer behavior, segment high-risk customers, and provide actionable insights to improve retention rates.



Key steps in project

- **Data Collection:** Extract relevant telecom customer data using SQL queries.
- **Data Preprocessing:** Clean and prepare the data to ensure high-quality analysis.
- **Exploratory Data Analysis (EDA):** Use Power BI to visualize trends and identify churn patterns.
- **Visualization and Reporting:** Develop interactive dashboards and comprehensive reports



Based on SQL queries

1

Focus on Key Business Metrics
Actionable insights: Contracts having month to month tenure is higher churn, prioritize strategies like offering incentives for longer contracts or providing loyalty discounts for long-term customers.

2

Churn reason: Based on the customer insights high churn is due to competitor had better devices.

3

Financial impacts:
Understanding the average monthly charges of churned vs. retained customers can help assess the financial impact of churn.

4

Evaluate Payment Methods: If certain payment methods are more prone to churn, it might indicate issues with payment processes. Offering smoother, more flexible payment options could help reduce churn rates for those customers



Key insights from EDA(Exploratory data analysis)

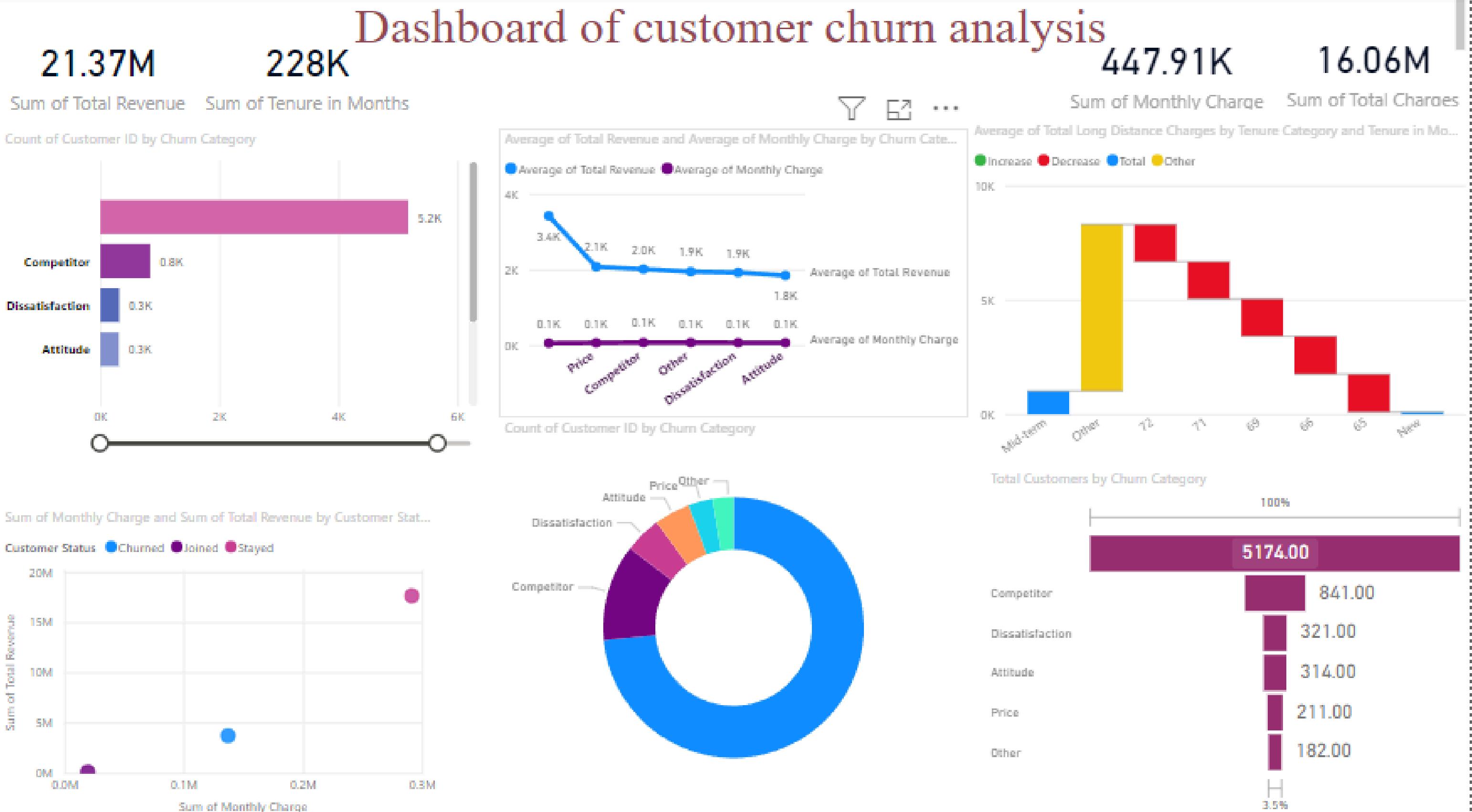
1 Churn Rate across customer demographics

2 Service Usage patterns of customers who churned vs. those who stayed.

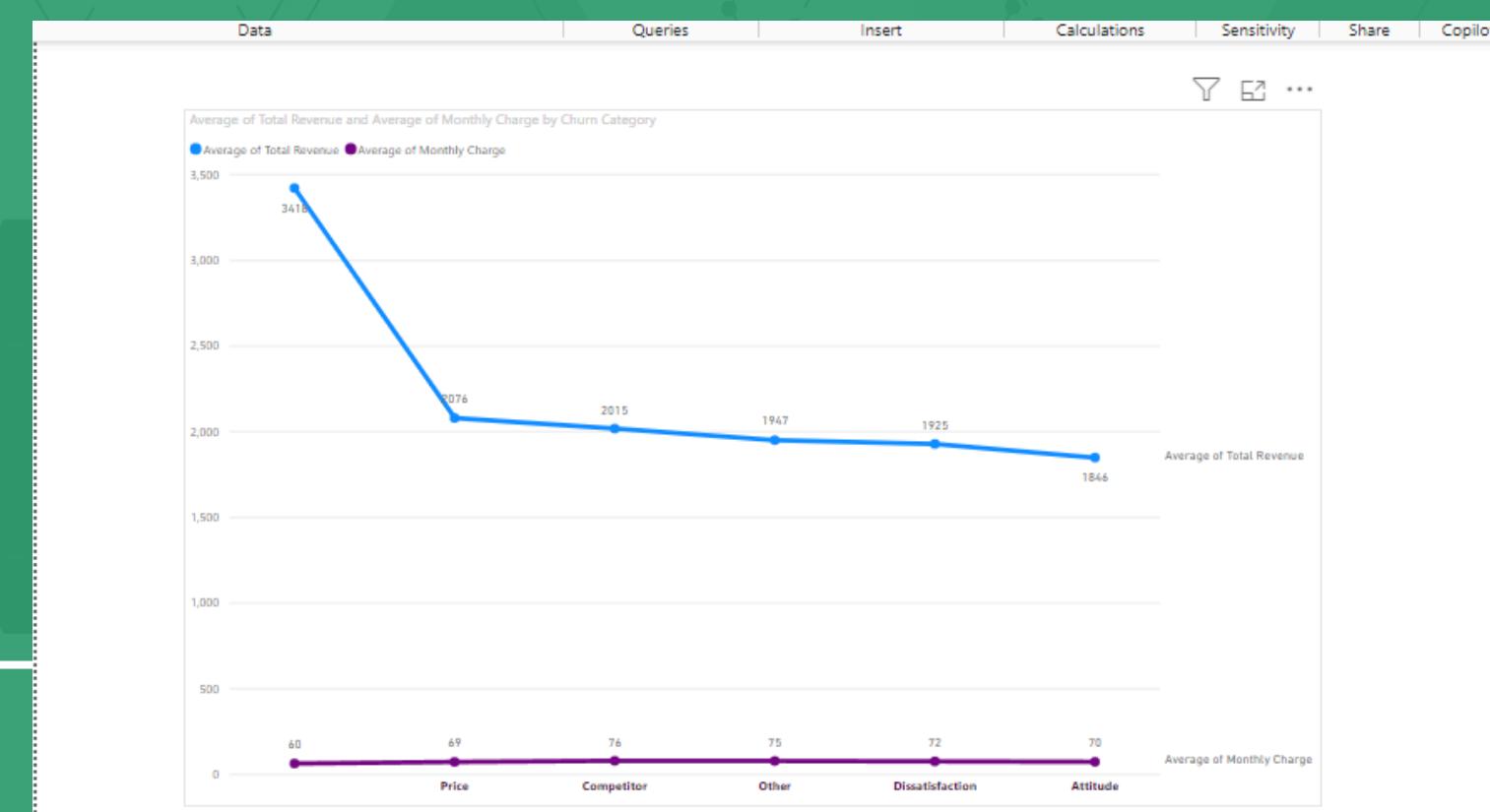
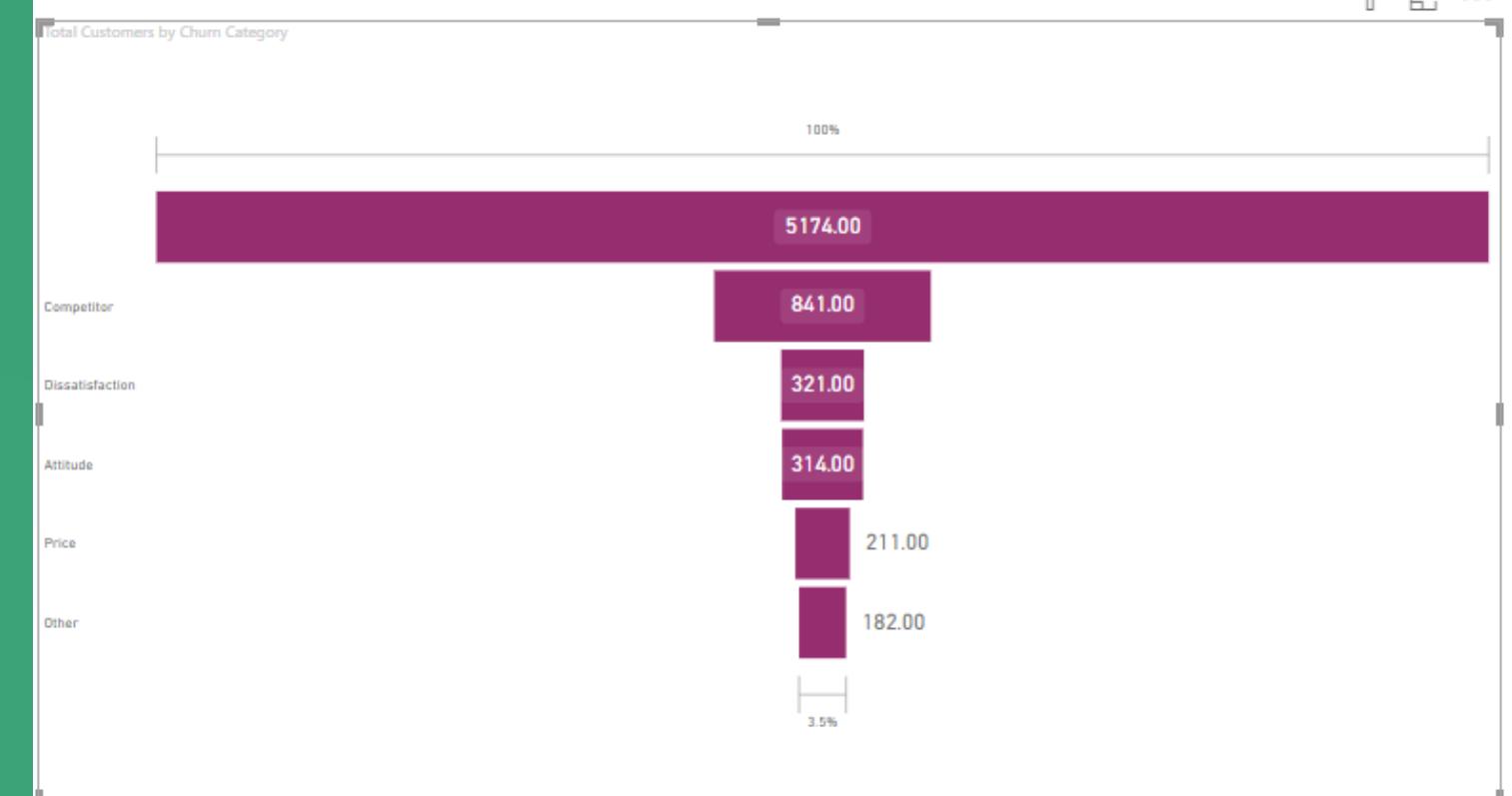
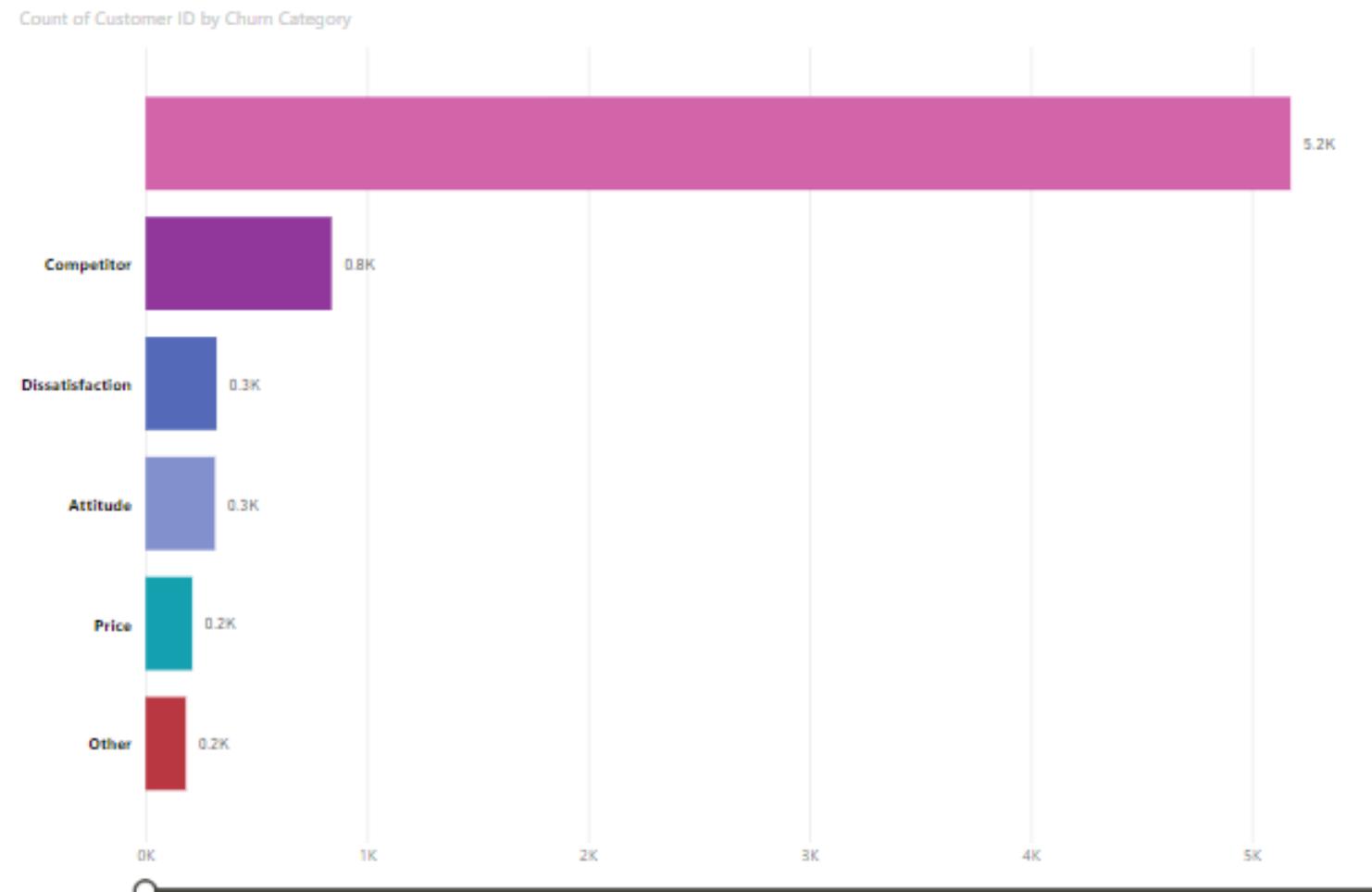
3 Customer Tenure and its relation to churn.



Visualizations

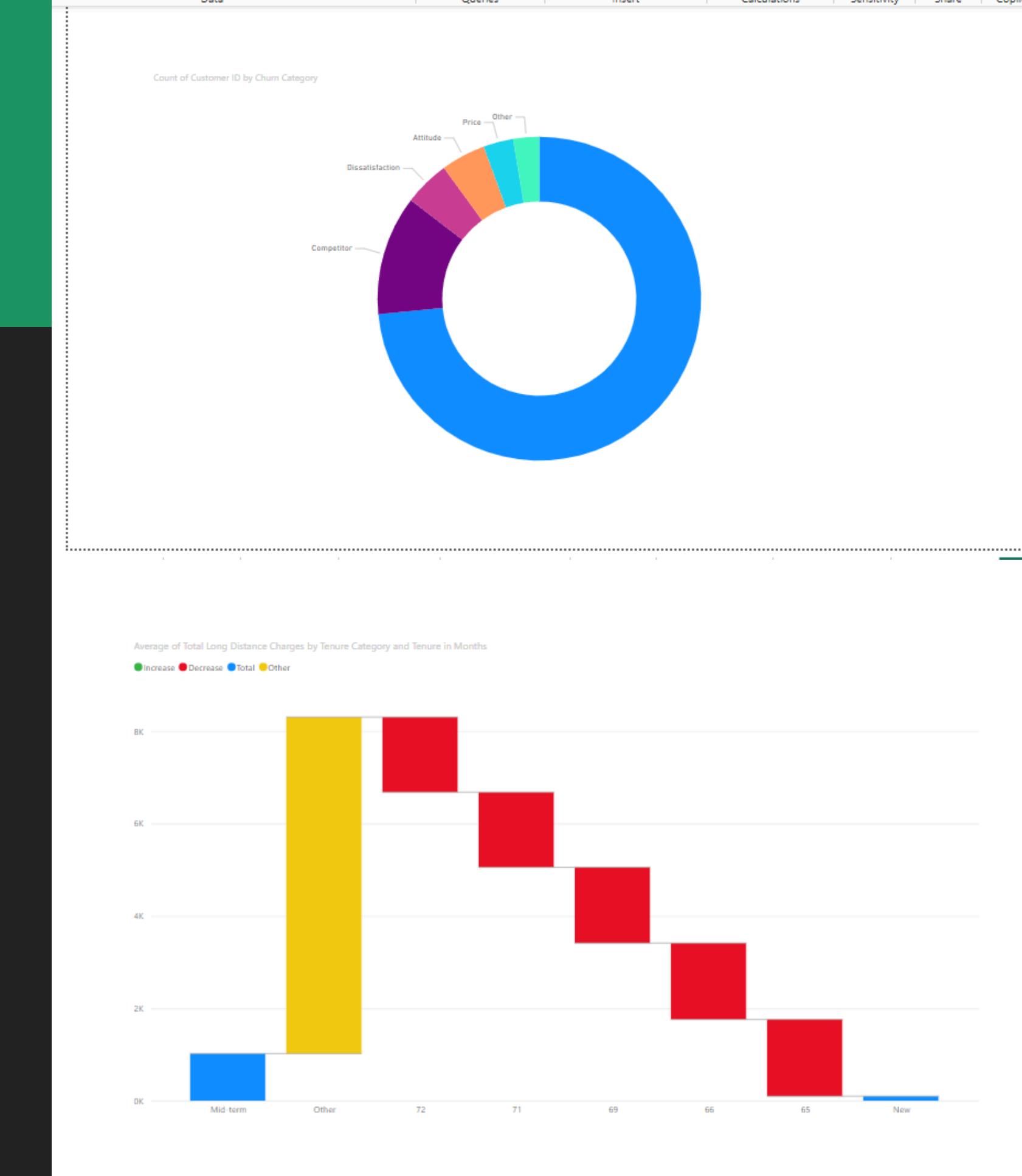


Charts



Result

- In PowerBI these charts created to analyse the customer insights, churn rate based on category, tenure, monthly charges, total revenue.
- These visualizations will give you comprehensive insights into customer churn patterns and help identify factors that drive churn.



Retention strategies

- Offering loyalty rewards to customers with short tenure.
- Providing discounts for customers with high monthly charges.
- Improving services (e.g., internet speed, support) to target customers who may churn due to dissatisfaction.
- Effective actions with competitive analysis is what highly required.
- By utilizing customer status we can still retain the customers who are about to churn.

Strategic recommendations

- Target High Churn Cities: Identifying cities with higher churn rates. These locations may require additional marketing campaigns or improved service.
- Enhance Product Features: "Competitor had better devices" is a recurring reason for churn, consider updating device options or bundling better products to retain customers.
- Referral Programs: Customers with a low "Number of Referrals" might need incentive programs to bring more users to the service, enhancing customer satisfaction and retention.

Thank You