# Customer Churn Analysis & Business Action Dashboard

Leveraging Power BI to transform predictive insights into actionable business intelligence.

From Prediction to Action: Project Context

Our journey began with developing a robust machine learning model to identify customers at risk of churn. This initial phase focused on:

- Building a predictive model

- Evaluating model performance (recall, precision, accuracy)

- Understanding trade-offs in an imbalanced churn dataset

While the model provided powerful predictive capabilities, our stakeholders needed more than just predictions. They required clear visibility into the "why" and "what next."

Why a Power BI Dashboard?

This Power BI dashboard was developed to bridge the gap between complex analytical insights and intuitive, decision-ready business intelligence, empowering teams to act effectively.

Clarity on Churn Drivers

Gain clear visibility into the underlying reasons why customers churn.

High-Impact Insights

Identify the most significant factors contributing to customer attrition.
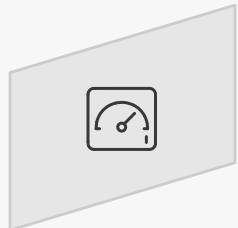
Actionable Recommendations

Translate complex data into practical steps for business teams.

Dashboard Objectives: Guiding Our Strategy

The Power BI dashboard aims to provide comprehensive insights and actionable guidance for retention efforts.

Overview & Impact

Visualize churn rates and revenue at risk.
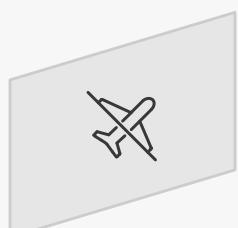
Driver Exploration

Analyze behavioral, transactional, and service-related churn drivers.

Customer Segmentation

Segment customers by risk, engagement, and value profiles.

Business Actions

Recommend practical actions based on observed patterns.
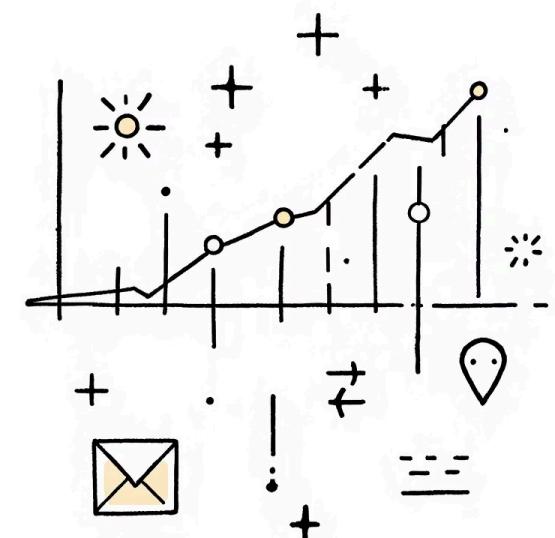
User Accessibility

Intuitive visuals and tooltips for non-technical users.

Data Overview: The Foundation of Our Insights

The dashboard relies on a meticulously cleaned and preprocessed churn dataset, ensuring consistency and accuracy with the machine learning model.
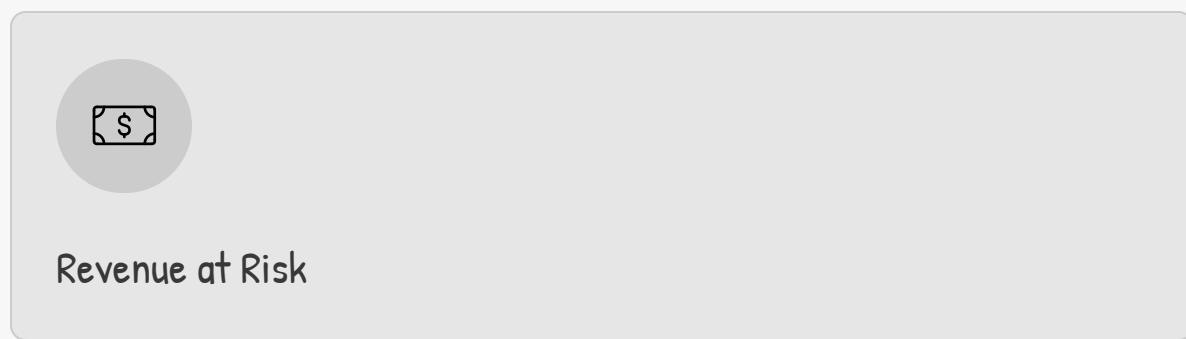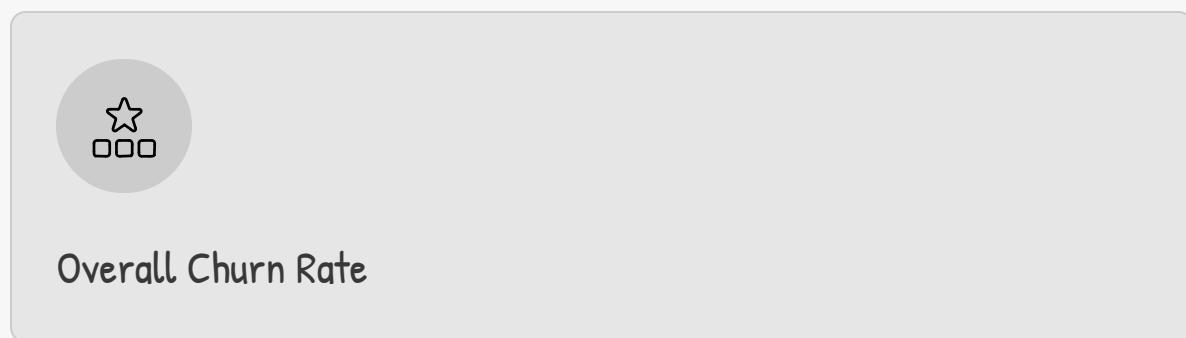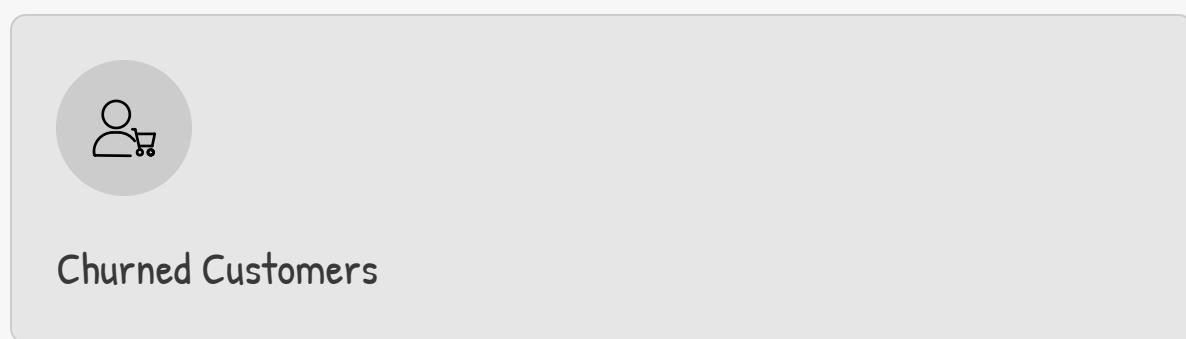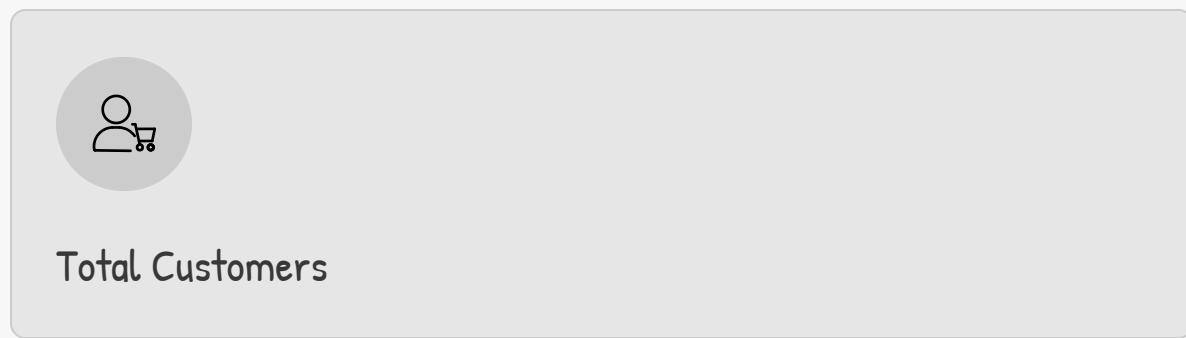
- **Customer Demographics:** Age, location, tenure, and other relevant attributes.

- **Transaction Frequency & Total Spend:** Patterns of purchase and overall monetary value.

- **Engagement Metrics:** Login frequency, duration of inactivity, feature usage.

- **Customer Service Indicators:** Number of unresolved issues, support interactions.

- **Churn Status:** The target variable indicating whether a customer has churned.
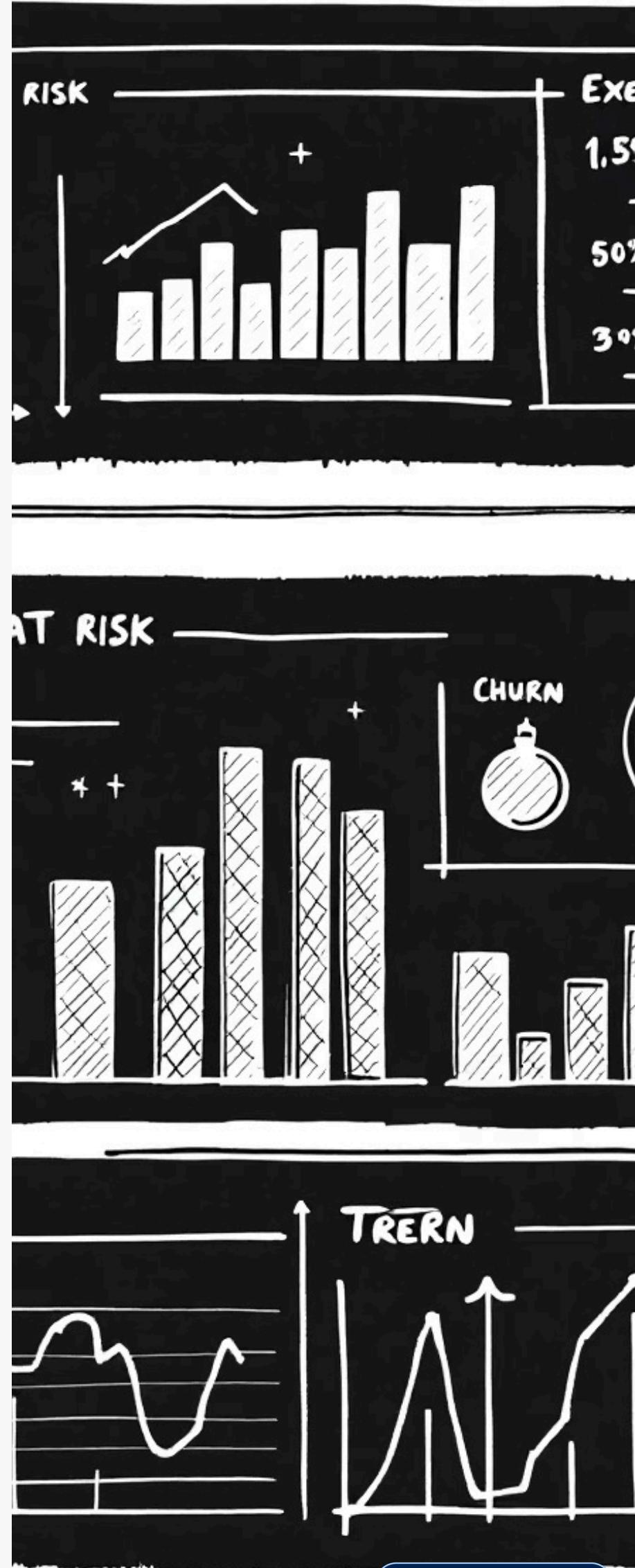
All data transformations, type corrections, and derived fields were managed via Power Query, maintaining alignment with our machine learning dataset.

Dashboard Structure: Executive Overview

The Executive Overview page provides a high-level snapshot of the churn situation, focusing on key performance indicators and financial impact.

Total Customers

Churned Customers

Overall Churn Rate

Revenue at Risk

This page directly addresses a critical business question: "How serious is customer churn, and what is its financial impact on our business?"
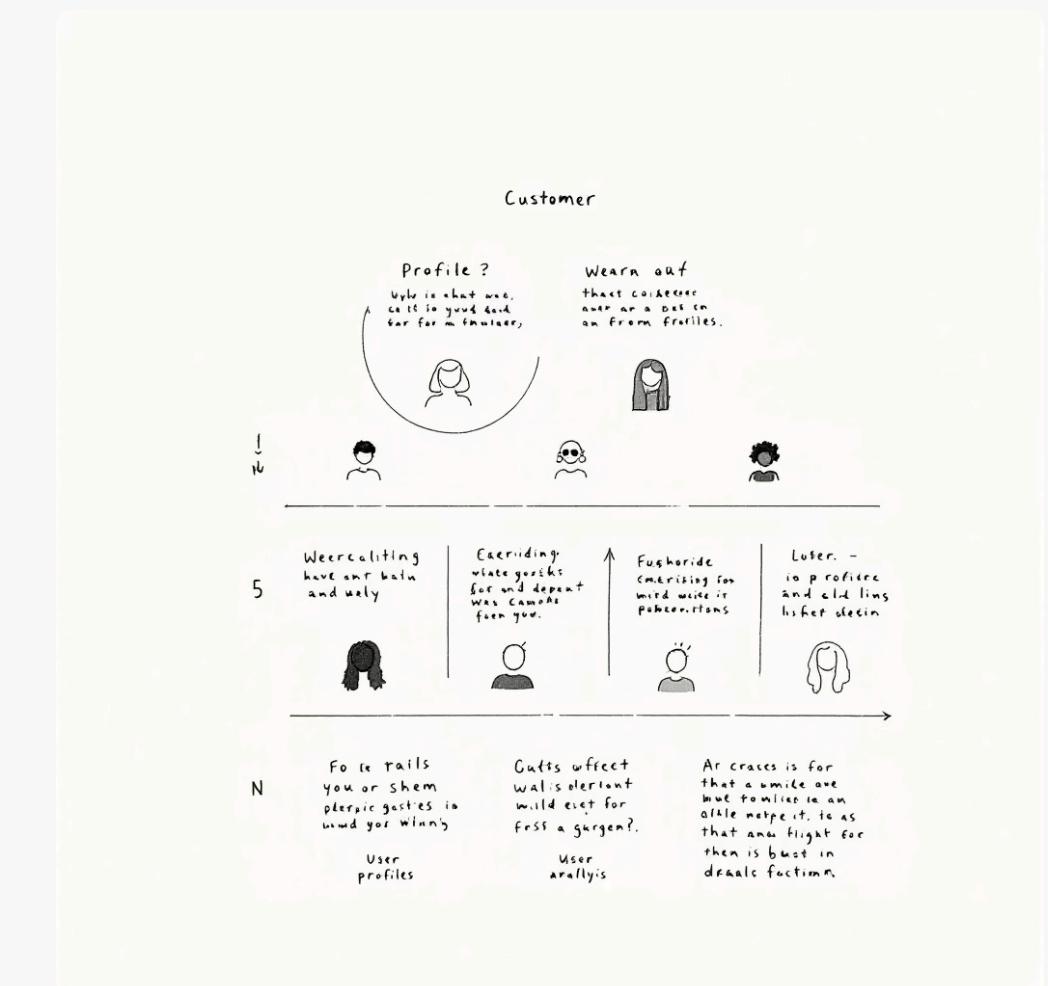
Deep Dive: Customer Segmentation Analysis

This section reveals churn patterns across distinct customer segments, highlighting the dominance of behavioral factors over demographic characteristics.

Key Focus Areas:

- **Purchase Recency:** How recently customers made a purchase.

- **Login Activity Status:** Current engagement levels with the platform.

- **Revenue Contribution:** The financial value each segment brings.

Key Insight: Customers with low engagement or long periods of inactivity exhibit significantly higher churn rates, reinforcing the importance of active user experience.

Interactive tooltips provide definitions for segment categories and clarify classification thresholds without cluttering the visuals.

Behavior & Interaction Analysis

Examining customer interactions with our platform and services reveals critical friction points accelerating churn.

- **Login Frequency**

  Infrequent logins often signal disengagement and heightened churn risk.

- **Transaction Frequency**

  A decline in purchasing activity is a strong predictor of impending churn.

- **Unresolved Service Issues**

  Customers with pending support tickets show significantly higher churn rates.

Key Insight: Unresolved issues combined with declining engagement are powerful indicators of customer dissatisfaction and a primary driver of churn.

Business Action Dashboard: Turning Insights into Strategy

This dashboard translates analytical insights into practical, categorized recommendations for immediate business intervention.

Retention Offers

Targeted incentives for at-risk customers.

Priority Support

Dedicated assistance for high-value customers with issues.

Re-engagement Campaigns

Strategies to reactivate inactive or low-engagement users.

Continuous Monitoring

Keep a close watch on critical customer segments.

Recommendations are dynamically generated based on churn risk, transaction frequency, engagement levels, and potential revenue impact. This dashboard allows for customer-level drill-downs, making it operational for business teams.

A Holistic Churn Analytics Solution

This Power BI dashboard concludes our churn analysis project, offering a comprehensive solution that integrates predictive power with actionable business intelligence.

Exploratory Analysis

Behavioral Insights

Action-Oriented Recommendations

Revenue Impact

By empowering stakeholders with clear data and direct recommendations, we can prioritize retention efforts, effectively reduce churn, and safeguard long-term revenue growth.

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