

Business Understanding & Hypothesis Framing
Mail to the AD

Subject: Proposal for Testing Hypothesis on Churn Driven by Price Sensitivity

Respected Ma'am,

I hope this email finds you well. Following our recent team meeting and discussions on the hypothesis that customer churn in the SME segment is driven by price sensitivity, I have outlined a proposed approach to test this hypothesis and provide insights for potential mitigation strategies.

Formulating the Hypothesis:

The hypothesis posits that changes in prices significantly influence customer churn, particularly in the SME segment. To operationalise this as a data science problem, we can frame it as follows:

Null Hypothesis (H0): There is no significant relationship between price changes and customer churn.

Alternative Hypothesis (H1): Price changes have a significant impact on customer churn.

Proposed Steps:

1. Data Collection

- Obtain historical data on customer transactions, including usage patterns, billing details, and any instances of customer churn.
- Extract data related to pricing changes, promotions, and discounts offered to customers.

2. Feature Engineering

- Identify key features that may contribute to customer churn, such as:
- Customer demographic information.
- Usage patterns and consumption history.
- Billing frequency and amount.
- Historical interactions with customer service.
- Any promotions or discounts applied.

3. Data Preprocessing

- Handle missing values, outliers, and ensure data consistency.
- Encode categorical variables and normalise numerical features.

4. Exploratory Data Analysis (EDA):

- Explore the distribution of prices and changes over time.
- Analyse the correlation between price changes and customer churn.
- Identify any patterns or trends in customer behaviour before churning.

5. Modelling:

- Split the data into training and testing sets.
- Apply predictive modelling techniques such as logistic regression, decision trees, or random forests to assess the impact of price changes on churn.
- Evaluate model performance using appropriate metrics like accuracy, precision, recall, and F1-score.

6. Validation and Interpretation:

- Validate the model on a separate dataset to ensure generalisability.
- Interpret the model results to identify the significance of price sensitivity in predicting churn.

7. Recommendations:

- Based on the model outcomes, provide recommendations on which customers are more likely to churn due to price sensitivity.
- Assess the potential impact of offering a 20% discount to at-risk customers.

Data Required from the Client:

- Historical customer transaction data.
- Pricing and discount information.
- Customer demographic details.
- Records of customer interactions and support history.

Expected Deliverables:

- Predictive model highlighting the relationship between price changes and churn.
- List of customers at high risk of churn and likely to be influenced by a 20% discount.

I believe that by rigorously testing this hypothesis, we can provide valuable insights into the dynamics of customer churn and offer data-driven recommendations for the 20% discount strategy.

Please feel free to share your thoughts on this approach or suggest any modifications.

Best regards,
Pragati Mehra
Data Science Intern