

Subject: Approaching the Hypothesis of Price Sensitivity Driving Customer Churn

Dear Associate Director,

I hope this email finds you well. I wanted to share my thoughts on how we can go about testing the hypothesis that customer churn in the SME segment is driven by price sensitivities. As per our discussion, understanding and addressing this factor is crucial in devising an effective strategy to retain these customers. Below, I've outlined the major steps and considerations for testing this hypothesis:

1. Problem Formulation: Our objective is to build a predictive model that can identify SME customers who are more likely to churn due to price sensitivity. In this context, we can frame the problem as a binary classification task. The goal is to predict whether a customer will churn ('1') or not ('0') based on their historical data and relevant features.

2. Data Collection: To build an effective model, we'll need historical data on SME customers' interactions, usage patterns, billing information, and any past instances of churn. Relevant data fields may include:

- Customer demographics (industry, company size, location, etc.)
- Billing history (average monthly spend, payment patterns)
- Usage patterns (energy consumption trends)
- Contract details (length, type)
- Customer feedback or complaints
- Past interactions with discounts or promotions
- Churn history (churn status, churn date)

3. Feature Engineering: We need to derive relevant features that can capture customer price sensitivity and overall behavior. Some potential features might include:

- Percentage change in price over a specific period
- Ratio of price change to average monthly spend
- Time since last price change
- Payment consistency (variance in payment patterns)
- Customer tenure (length of time with our client)
- Usage trend stability (fluctuations in energy consumption)
- Interaction history with promotions or discounts

4. Exploratory Data Analysis (EDA): Before diving into modeling, it's essential to conduct exploratory analyses to uncover insights. We can:

- Visualize churn rates across different price change groups
- Examine correlations between price change and other variables
- Identify patterns in churn behavior based on customer characteristics
- Explore the distribution of price changes and their impacts on churn

5. Modeling Approach: For building the predictive model, we can consider various machine learning algorithms such as:

- Logistic Regression
- Random Forest
- Gradient Boosting
- Neural Networks

6. Model Evaluation and Interpretation: We'll need to split the data into training and validation sets to evaluate model performance. Metrics like accuracy, precision, recall, and F1-score will help assess the model's ability to predict churn. Additionally, we can use techniques like SHAP values to understand the contribution of different features to the model's predictions.

7. Deployment and Action: Once the model is trained and validated, we can apply it to the customer base on the 1st working day of each month to identify customers who are at high risk of churning due to price sensitivity. Those customers could be considered for a 20% discount offer to incentivize them to stay. In summary, by following these steps, we can effectively test the hypothesis that price sensitivities drive customer churn in the SME segment. If you have any further insights or directions you'd like me to explore, please let me know. I am eager to work on this project and contribute to our client's success.

Best regards,
Kshitij Chaudhari