

Subject: Exploring the Hypothesis of Price Sensitivity on Customer Churn

Dear Associate Director,

I hope this email finds you well. I've thoroughly reviewed the background information and the task at hand regarding our client, PowerCo, and the challenge of diagnosing the source of churning SME customers. Based on the provided context, I'd like to share my thoughts on how we can approach testing the hypothesis that customer churn is driven by price sensitivities.

Formulating the Hypothesis as a Data Science Problem:

The hypothesis we are focusing on is: "Customer churn in the SME segment is influenced by price sensitivity." To test this hypothesis, we can approach it as a classification problem where the goal is to predict whether a customer will churn or not based on their price sensitivity and other relevant features.

Steps to Test the Hypothesis:

1. Data Collection

We would need historical customer data from PowerCo, including attributes such as contract details, usage patterns, payment history, demographics, and any other relevant information. This data will help us understand customer behavior and preferences.

2. Data Preprocessing and Exploration

Cleaning the data, handling missing values, and exploring data distribution are critical initial steps. We can perform exploratory data analysis (EDA) to identify trends and correlations between variables. This can give us insights into whether price changes indeed coincide with churn instances.

3. Feature Engineering

Creating new features such as average consumption, tenure, and past interactions with customer support can enhance the predictive power of our model.

4. Model Selection

For predicting churn, we can start with a binary classification model such as logistic regression, decision tree, random forest, or gradient boosting. These models can learn patterns from historical data and help identify which customers are more likely to churn due to price sensitivity.

5. Model Training and Testing

We will split the data into training and testing sets to train the model and evaluate its performance. We'll use metrics such as accuracy, precision, recall, and F1-score to assess the model's effectiveness.

6. Feature Importance Analysis

After training the model, we can analyze the feature importances to understand which factors, including price sensitivity, contribute most to customer churn.

7. Model Application

Once the model is validated, we can apply it to predict customer churn at the beginning of each month. This will help identify which customers are at risk of churning due to price sensitivity.

8. Discount Incentive Strategy

For the identified high-risk customers, we can recommend offering a 20% discount to incentivize them to stay with PowerCo. This strategy aligns with our client's goal of reducing churn.

Required Data:

To effectively test the hypothesis, we would need access to historical customer data, including contract details, usage patterns, payment history, demographics, and any variables that could influence customer behavior.

Analytical Models:

We will use a combination of exploratory data analysis, binary classification algorithms, and feature importance analysis to understand the relationship between price sensitivity and customer churn.

Next Steps:

With your guidance, I believe our team can successfully tackle this challenge. I will begin by gathering the required data and preparing it for analysis. Once we have the data in place, we can move forward with model development, testing, and validation.

Please let me know your thoughts on this approach, and if there are any specific aspects you'd like us to focus on. I'm confident that our efforts will provide valuable insights into customer churn dynamics and contribute to PowerCo's retention strategies.

Looking forward to your feedback.

Best regards,
Syahril Dimas Sabirin