

Dear Associate Director (AD),

Thank you for the opportunity to provide my thoughts on testing the hypothesis that churn is driven by customers' price sensitivities.

To test this hypothesis, we will need to formulate it as a data science problem. Our problem statement can be: "Can we build a predictive model that can identify which SME customers are likely to churn due to their sensitivity to the current price and whether offering them a 20% discount will help retain them?"

To approach this problem, we would require data from the client on the following aspects:

1. Customer information: This will include information on customer demographics, contract information, usage patterns, payment history, and historical churn data.
2. Price information: This will include information on the price plans and any changes made in the past.
3. Discount information: This will include information on discounts offered to customers in the past, including the 20% discount.

To test the hypothesis, we would follow the below steps:

1. Data Cleaning: We will clean the data to remove any duplicates, missing data, or errors.
2. Exploratory Data Analysis (EDA): We will perform EDA to identify trends, patterns, and relationships between different variables. For instance, we will look at how the current price affects churn rates and whether some customer segments are more sensitive to price changes than others.
3. Feature Engineering: We will engineer new features from the available data to improve the performance of our predictive model. For example, we may create a variable that calculates how long a customer has been on a particular pricing plan.
4. Model Building: We will build a predictive model that identifies which customers are most likely to churn due to price sensitivity. We will use various machine learning algorithms, such as logistic regression, decision trees, and random forests, to build and validate the model.

5. Model Evaluation: We will evaluate the model's performance using metrics such as accuracy, precision, recall, and F1 score. This will help us identify the best-performing model that we can use to predict which customers are most likely to churn due to price sensitivity.

6. Offer Discount: Finally, we will apply the predictive model to the client's data to identify customers who are most likely to churn due to price sensitivity. We will recommend that these customers be offered a 20% discount to incentivize them to stay with the client.

In conclusion, to test the hypothesis that churn is driven by customers' price sensitivities, we will need data on customer information, price information, and discount information. We will use various data science techniques such as data cleaning, EDA, feature engineering, model building, and evaluation to build a predictive model that identifies customers who are most likely to churn due to price sensitivity. Finally, we will recommend offering a 20% discount to the identified customers to incentivize them to stay with the client.

Thank you for your attention.

Sincerely,

Arnab De