

Respected Associate Director,

Thank you for giving me the opportunity to work on this project with your team.

I have spent some time reviewing the background information and thinking about how we can test the hypothesis that the customer churn is driven by price sensitivities.

Based upon my understanding and research, the hypothesis can be formulated as a data science problem and can be approached using a range of analytical techniques.

Here is a brief overview of the steps we could take to test this hypothesis.

1. **Define Price Sensitivity:** We need to first define the metric that we will use to measure the price sensitivity, as it is affected by many factors. We could use range of metrics, such as percentage change in demand with a percentage change in price ,price elasticity or willingness to pay.
2. **Analyse customer data:**We need to gather customer data that includes information on customer demographics, usage patterns and pricing history. We can use this data to analyse how price changes has effected the churn rates in the past. This analysis can help to identify patterns , customers and demographics which are sensitive to price changes.
3. **Conduct Customer surveys:** We could conduct customer survey to collect data on customer preference and perspective related to prices. These surveys could help us understand and identify the reason why customers churn, including whether the price changes are the key factors.
4. **Development of predictive model:** We can use the data we have gathered to make predictions on which customer are more likely to churn based upon their price sensitivity. The model could use factors such as customer demographic , usage patterns and price history to make predictions.
5. **Testing the model:** We need to test the model using historical data to ensure its accurate and effective in predicting churn based on price sensitivity. Once the model is deemed accurate, it can be used make predictions which customers are at the risk of churning and therefore those particular customers could be offered the 20% discount.
6. **Evaluating the Discount:** After offering the discount to the customers we need to analyse how many of the customer decided to stay with the company, so that we can decide the effectiveness of the discount incentives.

To carry out these steps we need to gather customer data like customer demographic, usage pattern, pricing history. We will also need to collect the customer survey data to understand their preference and perspective. In addition, we need to build a predictive model that incorporates this data and predicts the customer who are likely to churn.

We could use the range of analytical models to build this predictive model. We will need to evaluate the accuracy of the model using the area under the ROC curve or the F1 score.

Overall, I believe that a combination of data analysis, customer surveys, and predictive modelling can help us test the hypothesis that churn is driven by customers' price sensitivities. The use of a predictive model to identify customers at risk of churning and to determine which customers should be offered the discount can be an effective strategy for retaining customers in the SME segment.

Please let me know if you have any questions or concerns about this approach, and I look forward to working with your team on this project.

Thanks and regards,  
Chandan S

