

Dear Associate Director,

To address the SME customer churn problem, we need to know whether there is a relationship between price and customer churn using hypothesis testing. First, we will define the **null hypothesis** and **alternative hypothesis**:

Null Hypothesis (H_0): There is no significant relationship between price sensitivity and churn rate among the SME segment customers.

Alternative Hypothesis (H_a): There is a significant relationship between price sensitivity and churn rate among the SME segment customers.

Next, we need to determine the appropriate statistical test to use for this problem. Since we are testing the relationship between two variables (price sensitivity and churn rate), a correlation test would be appropriate. I suggest defining the type of the relationship (linear / non-linear) then decide on whether to use **Pearson's Correlation** for linear relationship or **Spearman's Correlation** for non-linear relationship.

The dataset that would help us in this investigation should represent every SME customer in a row with the corresponding variables that are:

- **Billing data:** Billing data can be used to determine how much customers are paying for their energy usage and how frequently they receive bills. This information can help to identify customers who are likely to be more price sensitive.
- **Usage patterns:** Information on customers' energy usage patterns, such as the amount of energy they consume, the time of day they consume it, and their peak energy usage, may provide insights into their level of price sensitivity.
- **Interaction history:** like contract start date or whether there have been any concerns or complaints expressed by the customers. Any feature that would represent the customer's satisfaction level.
- **Enterprise information:** like domain, size (small/medium) ...
- **Churned:** whether the customer enterprise churned or not.

Another useful data could be competitor's information and their pricing so we can compare the costs relative to the competition in the field.

Please let me know if you have any questions or concerns about this approach. I look forward to your feedback.

Best regards,
Nacer KROUDIR