Dear Associate Director,

I understand that our client is seeking to determine whether pricing is the main driver behind churn among SME customers and whether a 20% discount would be effective in reducing churn.

To address this challenge, I propose to employ statistical techniques to explore the relationship between customer data and the likelihood of positive response to the discount offer. Assuming the dataset contains customer purchase history, demographic data, usage patterns, and pricing information, my hypothesis is:

Ho: The mean number of customers purchasing Powerco at the regular price = the mean number of customers purchasing Powerco at the 20% discount.

Ha: The mean number of customers purchasing Powerco at the regular price < the mean number of customers purchasing Powerco at the 20% discount.

As the population standard deviations are unknown, I plan to conduct a one-tailed test comparing the means of two independent populations using the appropriate test, which is the two-sample independent t-test.

My chosen significance level is $\alpha = 0.05$. Once I have collected and prepared the data using Python, I will conduct the t-test to test the hypothesis, which will result in a p-value. I will compare the p-value with the significance level to determine the significance of the results.

I look forward to presenting my findings to the client. Thank you for your attention to this matter.

Sincerely,

Candice Wu