

Dear [AD],

As per my understanding of client's requirement, two key points were highlighted which are as following:

1. Churn is due to price sensitivities.
2. To cope with the churn, new discount scheme to be introduced where we will be playing a role in strategizing it.

This churn is happening because of the power-liberalization of the energy market in Europe.

What is expected of us:

We provide a predictive model to help identify the possible customers who might churn by setting a certain threshold on churning rates. Also, we need to identify if the suggested 20 percent of discount will help to drive the revenue of client or impact the business in a negative way.

Before proceeding (the acquisition of data, consolidation, pre-processing, train, develop a model and deployment), I suggest a hypothesis testing. By employing hypothesis testing, we can draw conclusions about this relationship (price factor) among the customers (of different demographic, job profile, financial status and so on) by revealing other contributing "underlying" factors.

The approach for independent t-test:

Since it is a parametric test, we will assume, the population distributions are normal, sample have equal variances and the two samples are independent.

1. There are two hypotheses – null hypothesis and the alternative hypothesis. We will make a comparison between the aforementioned hypotheses and decide whether/not to reject the null hypothesis based on some condition/constraint.
2. To evaluate the null hypothesis, we need to calculate the p-value. P-value measures the probability of obtaining the observed results, assuming that the null hypothesis is true. (A p-value of 0.05 or lower is generally considered statistically significant.)
 - H_0 (null hypothesis): price change does not affect the churning of customers.
 - H_a (alternative hypothesis): price change does affect the churning of customers.

Some examples of potential data sources and fields that could provide insights into customer behavior.

1. Customer Demographics (Data on customer demographics such as age, gender, location, income level, and occupation can help identify patterns and preferences that influence customer actions).
2. Purchase History (Analyzing customers' past purchase behavior, including frequency, recency, and monetary value, can provide insights into their preferences, interests, and buying habits).
3. Customer Surveys and Feedback: Gathering direct feedback through surveys, interviews, or online reviews can offer valuable insights into customers' motivations, preferences, satisfaction levels, and reasons behind their actions.

4. Competitor Analysis: Analyzing competitor data, such as pricing strategies, product features, customer reviews, and market share, can help identify factors that influence customers' choices and actions.

The kind of exploratory analyses we can do:

1. Churn Rate Analysis: Calculate and analyze the overall churn rate by examining the number of customers who churned within a given time period
2. Demographic Analysis: Explore customer churn based on demographic factors such as age, gender, location or income level.
3. Time-to-churn Analysis: Explore the time it takes for customers to churn after certain events or milestones.

If you require more details, let's set up a meeting to discuss.

Thank you.

Best Regards,

K.Poornima