Dear AD,

I am writing to you to outline my plan to solve this problem.

I propose to proceed as follows:

1. Test the hypothesis: The hypothesis can be tested by analyzing historical data about customers' contracts.

Specifically, I will:

- Collect historical data about all customers' contracts.
- Extract data on the customers who transferred to other providers.
- Identify whether customers' churn and an increase in price happened at the same time.

If the customer churn is along with an increase in price, we can conclude the growth in prices affects customer churn. On the contrary, if customers transfer to another provider when there is no change or even a decrease in price, we can say prices do not affect customer churn.

2. Build a model to predict customer churn: It is a binary classification problem. All customers are labelled with either 1 (switch to another provider) or 0 (stay with the current provide).

In order to build a powerful model to predict customer churn, I intend to complete the following tasks:

- Task 1: Collect data on all customers, including
    - contract data: starting time and ending time, price, discount, promotions, etc
    - customer information: name, country, city, profit, revenue, company size, industry, etc
    - energy usage: energy consumption amount
    - If transferred to other providers, this is the target label
- Task 2: Understand and clean the data
- Task 3: Exploratory data analysis
    - Discovering data patterns by data visualization
- Task 4: Build a machine learning model and evaluate its performance
    - Train a model on the clean dataset got in task 2
    - Use cross-validation to evaluate the model performance
- Task 5: Identify whether a discount on price can prevent customer churn
    - Apply 20% discount on the prices, then predict the customers' labels again.
    - If the predicted labels (got in task 4) change from 1 to 0, this indicates the discount can stop customer churn.
    - On the contrary, if the predicted labels are still 1, this indicates the discount cannot stop customer churn.

I believe that this approach will allow us to identify the factors that are most likely to lead to customer churn, and to develop strategies to mitigate these risks.

I would be happy to discuss this further with you at your convenience.

Sincerely,

Santosh Kambala