HW Assignment - Data Analyst

Description:

Client XYZ advertises on TV. When customers purchase XYZ's product, Client XYZ currently asks their customers how they heard about them and if they say TV, they then ask what network the customer was watching. With this data, Client XYZ wants to know how much it costs to acquire a customer through TV, and they want to know what networks are the most cost efficient. With this information, they want guidance on what networks to stop advertising on (because they are less cost efficient) and which networks to spend more money.

Task:

Your job is to take Client XYZ survey data and tell them which networks are the most cost efficient by calculating the following:

1. Cost Per Visitor driven by the TV campaign
2. Conversion Rate (Purchases / Lift), and Cost Per Acquisition (CPA) driven by the campaign.

    Client XYZ wants the above information monthly, and broken down by network.

3. Client XYZ also wants input on how they can improve their survey. Attached to the assignment is Client XYZ's survey questions related to TV. Your job here is to tell client XYZ how they can improve the survey questions.

For the assignment, please use Python to make this task as automated as possible. Assume that this would be a monthly recurring report. Present the results in a clear and concise format for the client.

Datasets:

Purchase Exit Survey: This contains purchases for each survey response where a customer indicated they heard about XYZ through TV. Some customers declined to write in a Network and just left it blank; or they didn't see the network on the list and chose 'other'. There may be other discrepancies such as a network having purchases, but no spend, or spend with no purchases. These types of situations happen with the data and you should not take it as a sign that you did something wrong.

Airings: This data set shows the spend and "Lift" associated with each individual TV airing. You'll summarize this data by network to match up with the exit survey data.

Lookup: This table shows the matching names between the survey and the airings so you can

know how to match up the data.

Deliverable:

- A Python notebook which takes the input files and generates a report showing CPA and conversion rate Overall, and by Network and Month.
- A presentation of your work, including what you would present to Client XYZ to share your findings.

Additional Docs:
- Data file provided as an Excel
- XYZ Purchase Survey Questions