Data Analysis

Analyzing data for the oil industry and providing recommendations for improvement.

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Pre-Processing:

Data containing over 600 columns was obtained, with the majority of columns consisting of zero values. Upon data scrutiny, it was determined that their impact on the analysis was minimal or negligible, and the client would not derive any useful results from them. Therefore, using Python, the data was processed through a loop to eliminate any columns where all values were either 0 or 0.00%. This step resulted in reducing the number of columns to 74.

Code Link:

https://github.com/Riham-Ali/oli_oil_DataAnalysis

Result:

```
Index(['Age', 'Gender', 'Campaign Id', 'Campaign Name',
       'Campaign Active Status', 'Campaign Buy Type', 'Campaign Objective',
       'Campaign Start Time', 'Campaign Last Update Time', 'Campaign End Time',
       'Campaign Daily Spend Cap', 'Campaign Lifetime Spend Cap', 'Result',
       'Result Type', 'Cost Per Result', 'Cost Per Result Type',
       'Amount Spent', 'Paid Impressions', 'Paid eCPM', 'Clicks', 'eCPC',
       'Total Impressions', 'Paid Reach', 'Paid Frequency',
       '2 Second Video Views', 'Video Plays at 25%', 'Video Plays at 50%',
       'Video Plays at 75%', 'Video Completions', 'Avg View Time Millis',
       'Paid eCPMR', 'eCPV', 'Click Rate', 'Average Attachment Screen Time',
       'Total Attachment View Time', 'Attachment Impressions',
       'Attachment Frequency', 'Attachment Paid Reach',
       'Adds of Billing Information.1', 'Adds to Cart.1', 'Pages Viewed.1',
       'Purchases.1', 'Purchases Value.1', 'Save.1', 'Sign Ups.1',
       'Checkouts Started.1', 'Content Viewed.1',
       'Adds of Billing Information View.1', 'Adds to Cart View.1',
       'Pages Viewed View.1', 'Purchases View.1', 'Purchases Value View.1',
       'Checkouts Started View.1', 'Content Viewed View.1',
       'Adds of Billing Information Click.1', 'Adds to Cart Click.1',
       'Pages Viewed Click.1', 'Purchases Click.1', 'Purchases Value Click.1',
       'Save Click.1', 'Sign Ups Click.1', 'Checkouts Started Click.1',
       'Content Viewed Click.1', 'Purchase Roas',
       'Cost per Add of Billing Information', 'Cost per Add to Cart',
       'Cost per Page Viewed', 'Cost per Purchase', 'Cost per Save',
       'Cost per Sign Up', 'Cost per Checkout Started',
       'Cost Per Content Viewed', 'Total CPM', 'Gross Impressions'],
      dtype='object')
```

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Snapchat Analysis:

Data analysis of Snapchat data for Oli oil. The analysis identifies strengths and weaknesses within the data.

The analysis highlighted campaigns with the highest interaction rates, providing the client with a clear picture of the current situation. Notably, it was found that males above the age of 35 exhibited the highest interaction rates, while females under the age of 20 showed the least engagement.

1. The data was entered into Tableau to create a visualization, and the following results were obtained:

- Initially, the number of clicks was measured, taking into account the gender and age factors, to determine the age groups that showed the highest interest in the advertisements Fig 1.
  NOTE:In Snapchat "clicks" typically refer to the number of times users have clicked on the ad. Clicks are an important engagement metric for measuring the effectiveness of Snapchat ad campaigns. Clicks can indicate that users are interested in the ad and are taking action by tapping on it to learn more or to interact with your advertised content.

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<Age-Gender clicks>

Age

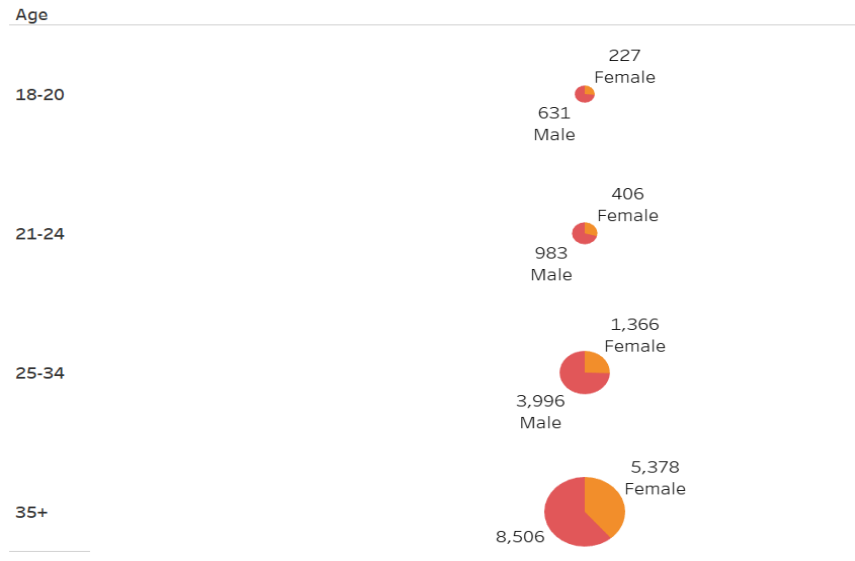| Age		
18-20	227 Female	631 Male
21-24	406 Female	983 Male
25-34	1,366 Female	3,996 Male
35+	5,378 Female	8,506

Figure 1

It was observed that age groups exceeding +35 in males showed greater interest in the product, as this category had the highest number of clicks on the ad.

- Subsequently, the effectiveness of the launched campaigns was measured, by considering the campaigns where the number of views exceeded two seconds. It was found that some advertisements had a duration of only one day but garnered longer viewing times Fig 2.
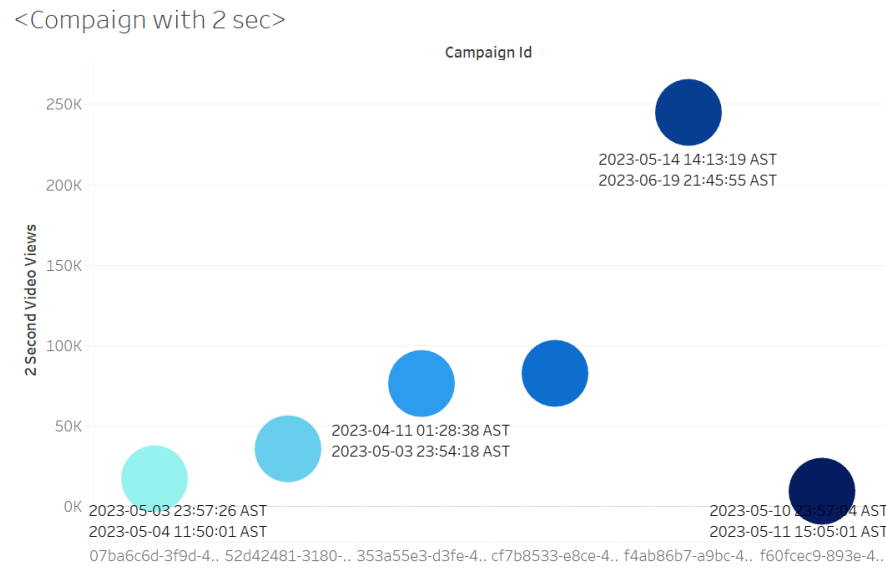

Figure 2

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- Then, an analysis was conducted for the total cost per thousand impressions (CPM) and the type of results for different age groups. The type of results is divided into two types based on clicks and Conversion Purchases.
  NOTE: Conversion Purchases" in the context of Snapchat ads refers to the number of times users have completed a specific action or conversion event that is related to a purchase. This action typically involves making a purchase of a product or service through a direct response to your Snapchat ad campaign Fig3.
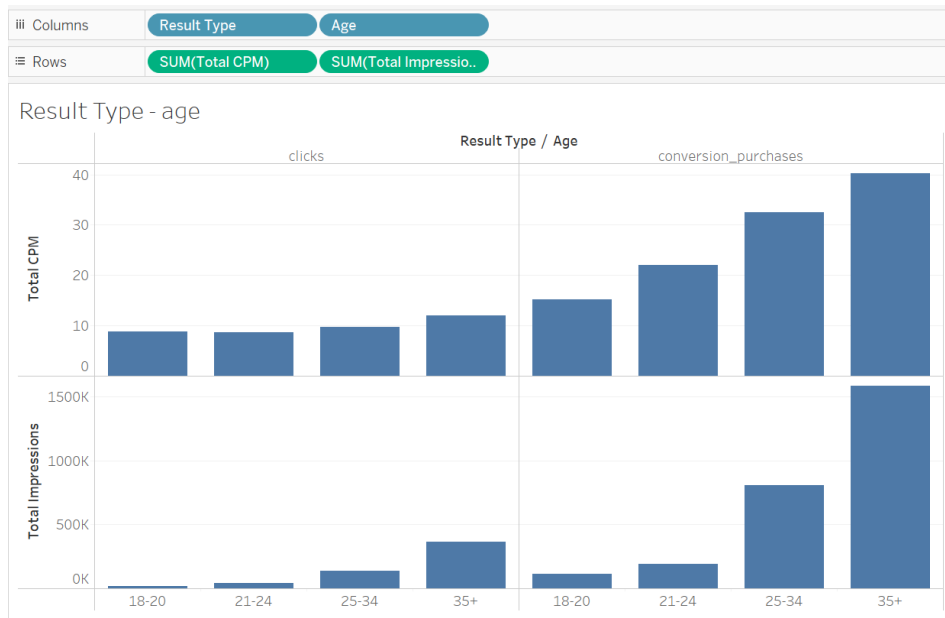

Figure 3

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- Then, the average view time breakdown was measured for different age and gender groups, depending on the type of results.

  NOTE: Average View Time represents the average time individuals within each demographic spend viewing content.