**Social Media Advertisement Analytics**

**Scenario**

You work as a data analyst for a digital marketing agency specializing in social media advertising. The agency manages campaigns across various social media platforms like Facebook, Instagram, and Twitter for different clients. Your task is to analyze the performance of these social media advertisements using historical data and present actionable insights to optimize future campaigns.

**Dataset Description**

The dataset contains 16 columns and 15k+ rows of information on various social media advertising campaigns, their goals, performance metrics, and demographics. Each row represents a unique ad campaign, capturing various details about the campaign and its outcomes. Below is a detailed description of each column in the dataset:

**Campaign\_ID:** A unique identifier for each advertising campaign. This helps in tracking individual campaigns and their performance.

**Date:** The date when the advertisement was displayed. This date-time column helps in analyzing ad performance over different time periods.

**Target\_Audience:** The primary demographic group targeted by the campaign. This can include age groups, gender, or specific interest groups (e.g.Women 18-24, Men 45-60).

**Campaign\_Goal:** The main objective of the campaign. This could be brand awareness, product launch, or other specific goals. Duration: The length of the campaign in days. This numerical value represents how long the campaign ran.

**Duration**: The total number of days the campaign ran, expressed as a numerical value. This helps measure the campaign's runtime and analyze its performance over specific time periods.

**Channel\_Used:** The social media platform where the campaign was run ( Facebook, Instagram, Pinterest, Twitter).

**Customer\_Segment:** The market segment targeted by the campaign. This could include segments based on interests, behaviors, or demographics (e.g., Health, Home).

**Language:** The primary language used in the campaign.

**Company:** The name of the company running the campaign. This categorical value helps in identifying which campaigns belong to which companies.

**Location:** The geographical location where the campaign was targeted. This could be a city, region, or country (e.g., Los Angeles, Miami).

**Conversion\_Rate:** The percentage of users who took a desired action (conversion) out of the total number of users who interacted with the ad. This is a numerical value typically represented as a percentage.

**Acquisition\_Cost:** The cost incurred to acquire each customer through the campaign. This is a numerical value in dollars.

**ROI:** The return on investment for the campaign. This is a numerical value representing the ratio of net profit to the cost of the campaign.

**Clicks:** The number of times users clicked on the advertisement. This numerical value is used to calculate the click-through rate (CTR) and gauge user interest.

**Impressions:** The number of times the advertisement was displayed to users. This numerical value indicates the reach of the ad campaign.

**Engagement\_Score:** A metric representing the level of user engagement with the ad. This numerical value is derived from various interactions such as likes, shares, and comments.

**Objective**

Analyze the performance of social media advertising campaigns across multiple platforms (Facebook, Instagram, Twitter) using historical data, and create a comprehensive Excel dashboard that provides actionable insights to optimize future campaign strategies.

**Here are a Few points for cleaning the dataset:**

• Check Duplicates

• Clean "Target Audience" and store gender and age\_group in different columns. • Clean “campaign\_goal” by removing \* and $.

• Clean “duration” (separate number and days).

• Clean "ROI" column by removing newline char

• Create a column for net profit = ROI x Acquisition cost.

• Create a column for clicks/day = clicks / duration.

**Here are a Few points for analysis and visualization.**

• Add Slicers for Location, Channel Used, campaign\_goal, customer segments and Timeline for Date

• What is the overall performance of each campaign in terms of Total Impressions, Total Clicks, and acquisition costs?

• Which campaign goal had the highest and lowest engagement scores? • Show trend of average clicks per month for each target audience

• Show Acquisition cost for the whole year for each campaign

• How many campaigns were targeted for each age group of Women or Men?(exclude all) • Show the distribution of total acquisition cost by location

**Note:** You can add insights (in form of pivot table or visuals) of your choice.

**Learning Resources:**

• https://sproutsocial.com/insights/social-media-analytics/

• https://www.techtarget.com/searchbusinessanalytics/definition/social-media-analytics • https://youtu.be/0RAvd-ng8Ew?si=2UAaCxFGyvav\_7B8