**Facebook Advertising on Campaign Performance**

**Introduction**

In today’s digital landscape, online advertising is a critical tool for businesses to expand their reach and convert leads into sales. Facebook, being one of the largest social media platforms, provides a robust advertising system that enables businesses to target specific audiences based on demographics, location, and behavior. This project analyzes the impact of Facebook ad campaigns, focusing on metrics such as *Clicks*, *Spend*, *Impressions*, *CTR* (Click-Through Rate), and *CPM* (Cost Per Mille).

**Research Question**

How effective are Facebook ad campaigns in achieving their intended outcomes based on *spend*, *impressions*, *clicks*, *CTR*, and *CPM* across multiple ad sets?

**Hypothesis**

Increasing ad spend correlates positively with higher impressions and clicks, but at diminishing returns as CPM (Cost Per Mille) increases over time.

**Decision**

The analysis intends to support a decision on whether to increase the Facebook ad budget for specific campaigns or ad sets and identify which ad sets deliver the best *cost-efficiency* based on performance metrics.

**Data Source**

The data used for this analysis is derived from the Facebook Ads Overview Report, a dataset that includes metrics such as:

* **Ad set names**: Cases and Cases APAC
* **Campaigns**: Retargeting APAC, UK&CO, and Free Trial campaigns
* **Metrics**: Clicks, Spend, Impressions, CTR (Click-Through Rate), CPM, and CPC (Cost Per Click)
* **Time Period**: Q4 2020 (October, November, December)

The dataset includes both raw data tables (seen in “Input Data” and “Data” tabs) and aggregated visualizations (in “Dashboard”), which provide a performance overview for campaigns and months (Jamison et al., 2020).

**Methodology**

The methodology comprises four key stages:

1. **Data Collection**
   * Raw data was extracted from the Facebook Ads Overview dashboard.
   * Metrics were organized by *ad set name* and *campaign*.
2. **Data Cleaning**
   * Removing unnecessary or duplicate rows.
   * Ensuring all numeric data (e.g., Spend, Impressions, Clicks) aligns correctly with their ad set and campaign.
3. **Data Analysis**
   * **Key Metrics Analysis**: CTR, CPC, Spend, and Impressions were analyzed across months (October to December).
   * **Trend Identification**: Line and bar charts were used to identify monthly performance trends in terms of clicks, CPM, and ad spend.
   * **Cost Efficiency**: Performance of ad sets (Cases and Cases APAC) was compared to determine the cost per click and impressions per dollar spent.
4. **Visualization Tools**
   * The analysis was visualized using tools like Excel charts and pivot tables, which summarize and display key metrics (CPM, CTR, and CPC) in a clear format.

**Findings and Discussion**

The analysis reveals the following insights:

1. **Impressions and Spend Relationship**
   * The total impressions for Q4 2020 amounted to **41,158**, while the total spend was **195.56**.
   * A positive correlation between ad spend and impressions was observed; higher ad spend led to higher impressions.
2. **Clicks Performance**
   * Click-through rates (CTR) remained low at **0.56%**, indicating that while impressions were high, audience engagement was limited.
3. **CPM and CPC Trends**
   * **CPM** (Cost Per Mille) was reported at **4.75**, which is relatively cost-efficient for Facebook ads.
   * The **CPC** (Cost Per Click) averaged **0.84**, indicating reasonable costs for audience engagement.
4. **Monthly Trends**
   * **November** saw the highest spend and impressions compared to October and December, as seen in the *“Clicks & Spend by Ad Set”* and *“Clicks by Month”* charts.
   * December experienced a decline in both metrics, highlighting potential saturation or lower ad engagement during the latter part of Q4.
5. **Ad Set Comparison**
   * *Cases APAC* and *Cases* ad sets performed differently across campaigns:
     + **Cases APAC**: Higher spend but marginally better performance in impressions.
     + **Cases**: Lower spend but achieved consistent cost efficiency.

**Conclusion**

The analysis of Facebook ad campaigns demonstrates that while increased ad spend leads to higher impressions and clicks, efficiency varies across ad sets and campaigns. Although CTR remained relatively low, CPM and CPC were cost-effective, suggesting that Facebook ads provide value for reaching broad audiences (Wiese et al., 2020).

**Recommendations**

1. Increase ad spend for high-performing ad sets (e.g., *Cases APAC*) during peak months to maximize impressions and engagement.
2. Optimize creative content to improve CTR and increase audience interaction.
3. Monitor CPM and CPC trends monthly to identify diminishing returns and adjust budgets accordingly.

**References**

Jamison, A. M., Broniatowski, D. A., Dredze, M., Wood-Doughty, Z., Khan, D., & Quinn, S. C. (2020). Vaccine-related advertising in the Facebook Ad Archive. *Vaccine*, *38*(3), 512-520.

Wiese, M., Martínez-Climent, C., & Botella-Carrubi, D. (2020). A framework for Facebook advertising effectiveness: A behavioral perspective. *Journal of Business Research*, *109*, 76-87.