

MARKETING DATA ANALYSIS REPORT

INTRODUCTION

OBJECTIVE

The objective of this analysis is to extract insightful data from a campaign marketing dataset through SQL. The analysis focuses on campaign performance, audience engagement, and cost effectiveness as drivers of decision-making based on data.

DATA OVERVIEW

The dataset contains marketing campaign performance data with key metrics in the following categories:

1. Campaign Performance

Campaign_ID: Unique identifier for each campaign

Impressions: Frequency with which the ad was shown

Clicks: Frequency with which users clicked on the ad

ROI: Campaign Return on Investment

2. Audience & Engagement

Target_Audience: Target audience for the campaign

Engagement_Score: A metric of user engagement with the campaign

3. Cost & Conversion Metrics

Acquisition_Cost: Cost of customer acquisition

Conversion_Rate: Proportion of users who made the desired action

CTR (Click-Through Rate): Clicks divided by impressions

Total_Conversions: Number of successful conversions

4. Channel Effectiveness

Channel_Used: Marketing channel utilized (e.g., social media, email)

Location: Geographical location where the campaign was executed

KEY QUESTIONS

This report provides answers to the following questions:

- Which campaign generated the most impressions?
- Which of the campaigns offered the highest ROI?
- What are the top three spots with the largest impressions?
- Which of the target audiences yielded the most average engagement score?
- What is the overall Click-Through Rate (CTR)?
- Which of the campaigns were most cost-efficient?
- Which of the campaigns have a CTR larger than some given value?
- How do different marketing channels compare when ranking by total conversions?

DATA ANALYSIS & INSIGHTS

Total Impressions by Campaign

Insight:

- Campaigns recorded a wide range of impressions, with the **highest totaling 10,000** and the **lowest at 1,000**, indicating significant variation in campaign reach.

Campaign with the Highest ROI

Insight:

- The **NextGen Systems** campaign achieved the **highest ROI of 8**, indicating strong performance in converting marketing investment into returns.

Top 3 Locations with the Most Impressions

Insight:

- **New York** recorded the highest number of impressions (**221,359,756**), followed closely by **Miami (221,347,726)** and **Chicago (219,999,352)**. This suggests that these cities had the strongest reach or audience exposure during the campaign.

Average Engagement Score by Target Audience

Insight:

- **18-24-year-old males** had the highest average engagement score of **5.52**, while other age and gender groups recorded an average score of **5.49**. This suggests that this demographic was the most engaged with the campaign, although the differences are relatively small, indicating similar levels of engagement across other groups.

Total Click-Through Rate (CTR)

Insight:

- The **total Click-Through Rate (CTR)** for all campaigns was **9.98%**, indicating a strong overall performance in terms of generating clicks relative to impressions across the campaigns.

Most Efficient Campaign

Insight:

- The **most efficient campaign** was **Alpha Innovations**, with a **cost per conversion** of **33,346**, indicating that this campaign achieved conversions at a relatively lower cost compared to others.

Campaigns with CTR Greater than or Equal to a Threshold

Insight:

Using a **CTR threshold of 5%**, we identified campaigns that significantly outperformed others in terms of user engagement.

The campaigns with the **highest CTRs** were:

- **Alpha Innovations – 99.20%** (Campaign ID: **26330**)
- **TechCorp – 99.20%** (Campaign ID: **122375**)

These two campaigns achieved **exceptionally high engagement**, far surpassing the industry benchmark and indicating highly effective targeting and messaging strategies.

Ranking Channels by Total Conversions

Insight:

Email emerged as the most effective marketing channel, generating a total of 2,697 conversions and ranking first overall. In comparison, Facebook ranked sixth with 2,625 conversions, despite its typical prominence in digital advertising strategies. While the margin between the two is relatively small, Email's performance highlights its strength as a high-converting and cost-effective channel.

CONCLUSION & RECOMMENDATIONS

SUMMARY OF KEY FINDINGS

1. New York had the highest impressions, and therefore it an ideal location for targeted

marketing campaigns.

2. NextGen Systems provided the highest ROI, which is proof of successful campaign strategies.
3. Men between 18-24 were most active, and therefore advertisements should be directed towards this group more.
4. Alpha Innovations was the most cost-efficient campaign, indicating successful spending.
5. Email had the highest total conversions, and therefore it is the highest-performing marketing channel.

RECOMMENDATION

1. Spending more on high-ROI campaigns like NextGen Systems.
2. Campaign target to New York and Miami, where the highest impressions are achieved.
3. Targeting engagement strategies for young male demographics (18-24) who interact the most.
4. Scalable email marketing efforts because it is the most powerful channel for conversions.
5. Monitor Facebook AD performance and rank Facebook higher in conversions.

LIMITATIONS & FUTURE WORK

- Future analyses should explore A/B testing to measure the impact of AD creatives on engagement.
- Additional cost-benefit analysis could refine campaign spending strategies.

APPENDIX: SQL QUERIES & OUTPUT

Query 1: Calculate Total Impressions for Each Campaign

```
1 • SELECT campaign_id, SUM(impressions) AS totalimpressions
2 FROM campaigns
3 GROUP BY campaign_id
4
```

Result Grid			Filter Rows:	Export:	Wrap Cell Content:
	campaign_id	totalimpressions			
▶	1	1922			
	2	7523			
	3	7698			
	4	1820			
	5	4201			
	6	1643			
	7	8749			
	8	7854			
	9	1754			
	10	3856			

Query 2: Identify the Campaign with the Highest ROI

```
1 • SELECT campaign_id ,company,roi
2 FROM campaigns
3 ORDER BY roi DESC
4 LIMIT 1;
5
```

Result Grid				Filter Rows:	Export:	Wrap Cell Content:	Fetch rows:
	campaign_id	company	roi				
▶	168	NexGen Systems	8.00				

Query 3: Find the Top 3 Locations with the Most Impressions

```
1 • SELECT
2   location, SUM(impressions) AS totalimpressions
3 FROM campaigns
4 GROUP BY location
5 ORDER BY totalimpressions DESC
6 LIMIT 3;
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:	Fetch rows:
	location	totalimpressions			
▶	New York	221359756			
	Miami	221347726			
	Chicago	219999352			

Query 4: Calculate Average Engagement Score by Target Audience

```
1 • SELECT
2   target_audience,
3   AVG(engagement_score) AS avgengagementscore
4 FROM campaigns
5 GROUP BY target_audience
6 ORDER BY avgengagementscore DESC;
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
	target_audience	avgengagementscore		
▶	Men 18-24	5.5150		
	Women 25-34	5.4927		
	Men 25-34	5.4920		
	All Ages	5.4869		
	Women 35-44	5.4866		

Query 5: Compute the Overall CTR (Click-Through Rate)

```
1 • SELECT
2     SUM(clicks) * 100.0 / NULLIF(SUM(impressions), 0) AS overallctr
3 FROM campaigns;
4
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
overallctr			
9.98264			

Query 6: Determine the Most Cost-Effective Campaign

```
1 • SELECT campaign_id, company,
2     FLOOR(acquisition_cost / NULLIF(conversion_rate, 0)) AS costperconversion
3 FROM campaigns
4 ORDER BY costperconversion ASC
5 LIMIT 1;
6
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:	Fetch rows:
campaign_id	company	costperconversion		
101103	Alpha Innovations	33346		

Query 7: Determine Campaigns with Click-Through Rate Greater than a Threshold

```
1 • SELECT
2     campaign_id,
3     company,
4     (clicks * 100.0) / NULLIF(impressions, 0) AS ctr
5 FROM campaigns
6 WHERE (clicks * 100.0) / NULLIF(impressions, 0) > 5
7 ORDER BY ctr DESC;
8
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:	Fetch rows:
campaign_id	company	ctr		
122375	TechCorp	99.20239		
26330	Alpha Innovations	99.20000		
133972	Innovate Industries	99.00498		
121860	Alpha Innovations	99.00100		
171192	Alpha Innovations	98.40479		
65535	DataTech Solutions	98.32182		
77443	Innovate Industries	98.12808		
173975	NexGen Systems	97.21946		
67651	DataTech Solutions	97.04724		
14262	TechCorp	96.99029		

Query 8: Rank Channels by Total Conversions

```
1 • SELECT
2     channel_used,
3     sum(conversion_rate) AS totalconversions
4 FROM campaigns
5 GROUP BY channel_used
6 ORDER BY totalconversions DESC;
7
```

Result Grid			Filter Rows:	Export:	Wrap Cell Content:
	channel_used	totalconversions			
▶	Email	2697.38			
	Google Ads	2681.24			
	Website	2674.95			
	YouTube	2667.76			
	Instagram	2667.57			
	Facebook	2625.27			