I. Project Title	Data Visualization Design
II. Team Number	27
III. Collaborators	Edmar Beatingo Peter Ogba Ebubechukwu Nwagbara Abdullateef Salami Damilola Owolabi
IV. Objectives	**General:** Analyze data from the Marketing team on Facebook ad campaigns they ran for an event called Superhero U. The Marketing team needs help in identifying at least one campaign to discontinue in order to cut costs. 1. Analyze the data from the Marketing team 2. Identify a campaign to recommend discontinuing 3. Create polished data visualizations to present findings to the Finance team. **For the Week:** Refine the design of data visualizations in order to share analysis and recommendations from the previous week's output.
V. Key Performance Indicators (KPI) and Terminologies	**Reach**- The number of people who saw your ads at least once. Reach is different from impressions, which may include multiple views of your ads by the same people. **Impressions** - The number of times your ads were on screen. **Frequency** - The average number of times each person saw the ad. Frequency = impressions / reach. **Clicks** - Total number of clicks on this campaign's ads. This can include: - Clicking on the link (a "link click") - Clicking on Global Shala's profile or profile picture - Clicking to expand the ad image to full screen - Commenting - Sharing - Post reaction (likes or loves) **Unique Clicks** - Total number of (unique) people who clicked on the ad. This can include: - Clicking on the link (a "link click") - Clicking on Global Shala's profile or profile picture - Clicking to expand the ad image to full screen

	• Commenting • Sharing • Post reaction (likes or loves) **Unique Link Clicks (ULC)** - Total number of (unique) people who clicked on the ad link. **Click-Through Rate (CTR)** - The percentage of times people saw the ad and then clicked on it. This can help you determine how effective an ad is at getting people to your website. CTR = total number of link clicks / total number of impressions **Unique Click-Through Rate (Unique CTR)** - The percentage of people who saw your ad and clicked on the link. Unique CTR = total number of unique link clicks / total number of impressions **Amount Spent in INR** - Total cost of the campaign in Indian rupee. **Cost Per Click (CPC)** - The average cost of one click on the ad. This can be used to measure how effective an ad campaign is. Note, a click can include: • Clicking on the link (a "link click") • Clicking on Global Shala's profile or profile picture • Clicking to expand the ad image to full screen • Commenting • Sharing • Post reaction (likes or loves) CPC = total amount spent / total number of clicks **Cost per Result (CPR)** - The average cost per "result" from the ads. In this case, GlobalShala set the result to be a unique click-through to get to the Superhero U website. This metric indicates how cost-effective this particular campaign is and can help you compare performance between campaigns. CPR = total amount spent / total number of results (unique link-clicks)
VI. Project Data Repository	**Platform:** Github Repository **Source:** Excelerate Internship Project **URL:** *https://github.com/edmarbeatingo/Excelerate_Internship_Project-Marketing_Campaign_Performance_Analysis/tree/main* **Image_no_1:** Shows the storage location of all relevant files to the

	project. All files could be accessed for review and reference.
VII. Data Analysis	**Platform:** Google Sheets **Source:** Data Exploratory Analysis **URL:** *https://docs.google.com/spreadsheets/d/1AptDlXOXqi7e4yjUVzDKHtW RfCkvxmOg6wlzoYnAd1U/edit?gid=322390859#gid=322390859*

campaign ID	SUM of Reach	SUM of Impressions	SUM of Frequency	SUM of Clicks	SUM of Unique Clicks	SUM of Unique Link Clicks (ULC)	SUM of Click-Through Rate (CTR)	SUM of Unique Click-Through Rate (Unique CTR)	SUM of Amount Spent in INR	SUM of Cost Per Click (CPC)	SUM of Cost per Result (CPR)
	0	0	0	0	0	0	0	0	0	0	0
Campaign 1	23,904	47,139	8.15	1,218	967	420	10.92%	3.90%	₹2,333.33	₹7.34	₹20.51
Campaign 10	3,636	4,091	3.29	121	105	57	10.88%	4.77%	₹856.67	₹22.36	₹55.95
Campaign 11	2,555	2,900	3.36	178	156	126	26.80%	15.20%	₹897.68	₹14.44	₹28.71
Campaign 2	46,494	67,313	4.25	3,743	2,833	1,595	17.79%	7.14%	₹1,579.02	₹1.24	₹3.10
Campaign 3	3,187	3,572	3.24	119	109	44	13.06%	4.19%	₹850.68	₹23.76	₹69.33
Campaign 4	3,307	4,267	3.62	171	146	112	16.54%	12.05%	₹923.96	₹16.51	₹23.79
Campaign 5	15,024	20,483	4.08	648	552	237	10.09%	3.45%	₹837.78	₹3.85	₹11.90
Campaign 6	31,831	37,246	2.26	1,400	1,238	987	8.61%	5.47%	₹955.21	₹1.35	₹2.11
Campaign 7	29,668	65,215	7.07	1,420	1,146	518	6.69%	2.41%	₹1,035.24	₹2.17	₹5.99
Campaign 8	21,929	28,974	3.87	2,765	2,058	1,073	29.56%	11.47%	₹942.78	₹1.04	₹2.69
Campaign 9	7,333	8,660	3.60	242	194	88	7.94%	3.02%	₹876.26	₹10.75	₹28.05
Grand Total	**188,868**	**289,860**	**46.80**	**12,025**	**9,504**	**5,257**	**158.88%**	**73.07%**	**₹12,088.61**	**₹104.82**	**₹252.13**

Image_no_2: Shows the data exploratory analysis per campaign as to the defined KPIs of the project.

Rankings Analysis	Effectiveness KPI Ranking								Cost Control KPI Ranking		
Campaign ID	Reach	Impressions	Frequency	Clicks	Unique Clicks	Unique Link Clicks (ULC)	Click Through Rate (CTR)	Unique Click-Through Rate (Unique CTR)	Amount Spent in INR	Cost per Click (CPC)	Cost per Result (CPR)
Campaign 1	8	9	11	7	7	7	6	4	1	6	6
Campaign 10	4	3	3	2	1	2	5	6	9	2	2
Campaign 11	1	1	4	4	4	5	10	11	7	4	3
Campaign 2	11	11	9	11	11	11	9	8	2	10	9
Campaign 3	2	2	2	1	2	1	7	5	10	1	1
Campaign 4	3	4	6	3	3	4	8	10	6	3	5
Campaign 5	6	6	8	6	6	6	4	3	11	7	7
Campaign 6	10	8	1	8	9	9	3	7	4	9	11
Campaign 7	9	10	10	9	8	8	1	1	3	8	8
Campaign 8	7	7	7	10	10	10	11	9	5	11	10
Campaign 9	5	5	5	5	5	3	2	2	8	5	4

Image_no_3: Shows the rank segmentation of the defined KPIs per campaign as categorized into effectiveness and cost control rating.

KPI Rankings Analysis	Score of KPI Ranking			Overall KPI Ranking
Campaign ID	Effectiveness	Cost Control	Composite Score	
Campaign 1	59	13	72	7
Campaign 10	26	13	39	2
Campaign 11	40	14	54	4
Campaign 2	81	21	102	11
Campaign 3	22	12	34	1
Campaign 4	41	14	55	5
Campaign 5	45	25	70	6
Campaign 6	55	24	79	9
Campaign 7	56	19	75	8
Campaign 8	71	26	97	10
Campaign 9	32	17	49	3

Image_no_4: Shows the individual score ranking of the categorized KPIs per campaign and tabulated composite scores for the basis of the overall rankings. The higher the overall rank, the more probable it is that it would be recommended for marketing ad discontinuation.
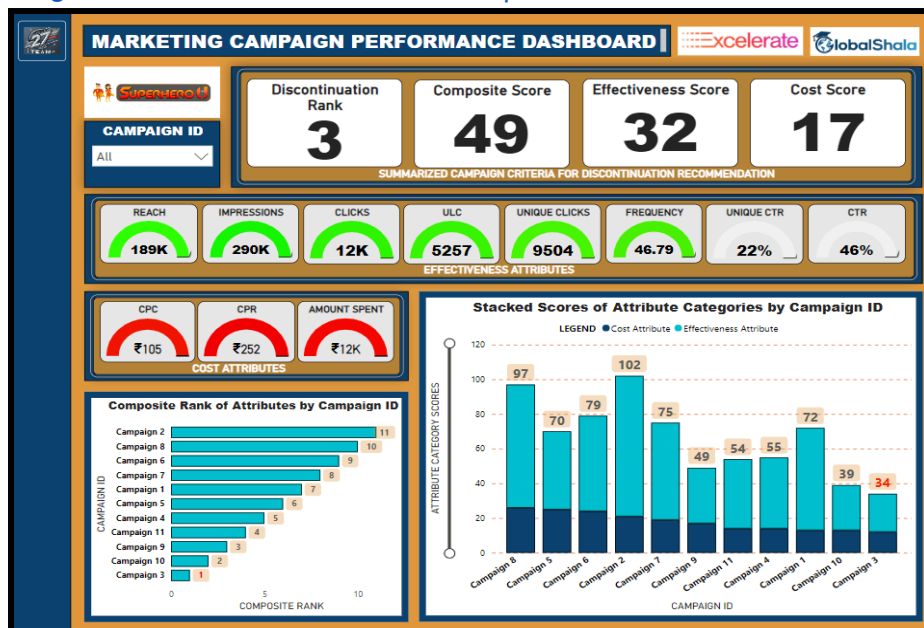

VIII. Data Visualization

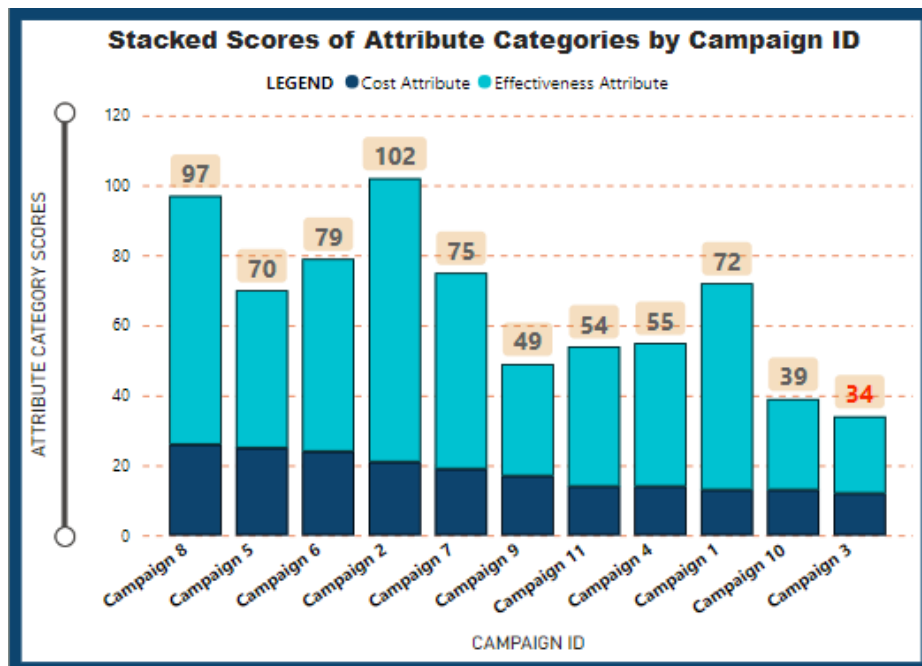**Dashboard Platform 1:** Microsoft Power BI
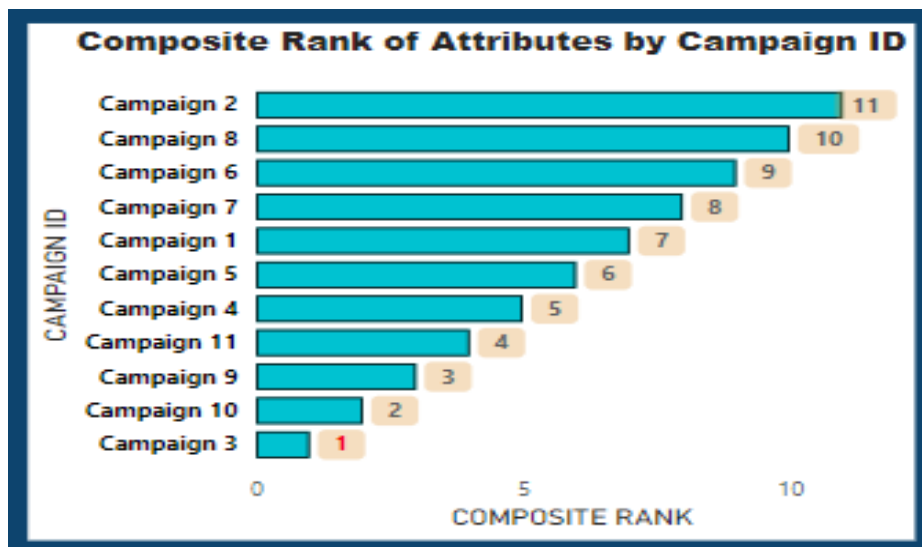**Source:** Power BI Marketing Dashboard
URL:
https://github.com/edmarbeatingo/Excelerate_Internship_Project-Marketing_Campaign_Performance_Analysis/blob/main/GlobalShala%20Marketing%20Performance%20Dashboard.pbix

Chart_no_1: Shows the main page of the interactive dashboard showing the top-choice campaign for discontinuation.

Chart_no_2: Shows the composite score per campaign as categorized into its effectiveness and cost attributes for running its associated ad.
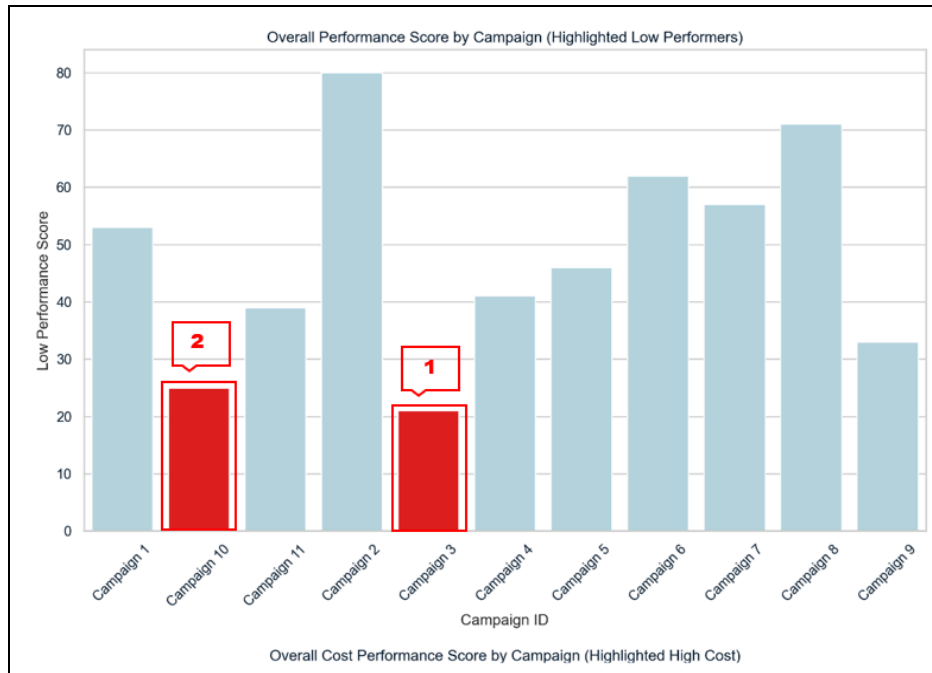

Chart_no_3: Shows the overall ranking per campaign, with Campaign 3 highlighted in red as the top-most low-performing ad.

Dashboard Platform 2: Python Notebook
Source: Python Codes for Visualization
URL:
https://github.com/edmarbeatingo/Excelerate_Internship_Project-Marketing_Campaign_Performance_Analysis/blob/main/marketing_campaign_performance.ipynb

Chart_no_3: Shows the top 2 low-performing campaigns as highlighted in red in terms of cost scoring.

| **IX. Project Findings and Discussion** | **Discussions:**

1. Criteria for Effectiveness Score:

● **Click-Through Rate (CTR):** Lower CTR indicates worse performance.
● **Reach:** Lower reach indicates less effective audience targeting.
● **Clicks:** Fewer clicks indicate lower engagement.
● **Impressions:** Lower impressions indicate lower visibility.
● **Frequency:** Lower frequency might indicate less ad exposure.
● **Unique Clicks:** Fewer unique clicks indicate lower individual engagement.
● **Unique Link Clicks (ULC):** Fewer ULCs indicate less effective call-to-action.

2. Criteria for Cost Control Score:

● **Cost Per Click (CPC):** Higher CPC means more cost for each click, indicating inefficiency.
● **Cost Per Result (CPR):** Higher CPR means more cost per desired outcome, indicating inefficiency.
● **Amount Spent in INR:** Higher total spend might indicate higher resource allocation, regardless of outcome. |

	3. Combining Effectiveness and Cost Control:
	• **Effectiveness Score:** Sum of ranks from all low performance metrics (CTR, Reach, Clicks, Impressions, Frequency, Unique Clicks, ULC). • **Cost Control Score:** Sum of ranks from all high cost metrics (CPC, CPR, Amount Spent). • **Composite Score:** Sum of the Effectiveness Score and the Cost Control Score. This gives equal weight to both aspects, identifying campaigns that perform poorly and/or are expensive. 4. Ranking Process: • Each metric is ranked individually, and these ranks are then summed to produce the Effectiveness Score and Cost Control Score. • Campaigns are then ranked based on the Composite Score, which is a sum of the two scores. **Findings:** 1. Campaign 3 has a high CPC ($23.76) and an even higher CPR ($69.32), making it costly for the results it achieves. 2. Campaign 10 has a very high CPC ($22.36) and CPR ($55.95), making it one of the most expensive campaigns per result.
X. Project Conclusion and Recommendation	**Conclusion:** Campaign 10 and Campaign 3 stand out with the highest values for the specified metrics and are the most likely candidates for discontinuation. **Recommendation:** Campaign 3 is recommended to be discontinued, given the results of the data analysis presented.