Week 1: GlobalShala – Superhero U Ad Campaign Optimization Report

(Team-3)

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Report Overview

This report documents the work completed during **Week 1** of the **GlobalShala Data Analytics Internship Project**. The primary focus for the week was on analyzing the performance of active Facebook ad campaigns under the *Superhero U* initiative to identify underperforming campaigns for potential discontinuation.

Key tasks included:

- Accessing and reviewing campaign performance data provided by the marketing team.
- Cleaning and validating the dataset to ensure analytical accuracy.
- Engineering a performance score metric to aid objective evaluation.
- Segmenting campaign results by geography and audience type.
- Creating exploratory data visualizations using Python and Power BI.
- Recommending underperforming campaigns for discontinuation based on analysis.

The result is a clear, evidence-based identification of two underperforming campaigns, backed by detailed segmentation and performance metrics, laying the foundation for strategic decisions in subsequent project phases.

Introduction

Purpose

The purpose of this report is to document the data acquisition, cleaning, segmentation, analysis, and visualization work completed during **Week 1** of the internship project. These tasks were aimed at determining which active ad campaigns in the *Superhero U* portfolio are underperforming and should be considered for discontinuation.

Data Description

The dataset used in this project was sourced from the **GlobalShala Marketing Team** and contained detailed performance metrics for active Facebook ad campaigns targeting students and educators across multiple countries.

Dataset Characteristics:

- **Source:** Facebook Ads Campaign Data (internal export)
- **Format:** Tabular (CSV/Excel)
- **Number of Campaigns:** 25+ campaigns, segmented by region and audience

Tools Used:

- **Python (Pandas, Matplotlib):** Data wrangling & visual analytics
- **Power BI:** KPI dashboards for performance scoring and decision making
- **Excel:** Initial data review and segmentation

Key Columns:

- campaign_id, campaign_name
- audience, geography
- click_through_rate_(ctr_in_%), engagement_rate, cpc (Cost Per Click), amount_spent_in_inr
- performance_score (engineered metric for evaluation)

This campaign dataset reflects real-time marketing investment and engagement outcomes across geographic regions and target demographics, forming the basis for campaign-level performance analysis.

Methodology

Data Cleaning & Validation

The raw campaign data was first cleaned to ensure quality and accuracy for analysis. Tasks performed included:

- Ensuring numerical fields (CTR, CPC, Engagement, Spend) were properly typed and formatted.
- Checking for and addressing missing or duplicate entries.
- Standardizing categorical fields like audience and geography for consistency.

Feature Engineering

A custom **Performance Score** was developed to quantitatively evaluate campaign effectiveness. This score was computed using a weighted combination of:

- **Click-Through Rate (CTR)**
- **Engagement Rate**
- **Cost Per Click (CPC)**

This composite metric enabled objective comparison across campaigns with varying spend levels and audience sizes.

Segmentation & Grouping

Campaign performance was analyzed across two dimensions:

- **Audience Type** (e.g., Students vs. Educators & Principals)
- **Geography** (e.g., Australia, UK, Nigeria, Grouped Regions)

This enabled targeted recommendations based on where and with whom campaigns performed poorly.

Data Visualization

Exploratory visualizations were created using:

- **Python** (Matplotlib, Seaborn): to assess distributions and outliers.
- **Power BI**: for dynamic filtering by region, CPC, engagement rate, and performance score.

These visualizations provided key insight into campaign behavior and performance variability.

Findings

Top Underperforming Campaigns Identified

Based on low CTR, high CPC, and low engagement, the following campaigns were flagged as the **lowest-performing**:

Campaign ID	Name	Audience	Geography	Performance Score
Campaign 3	SHU_Students (Australia)	Students	Australia	0.3506
Campaign 10	SHU_Students (UK)	Students	UK	0.4089

Both campaigns exhibited:

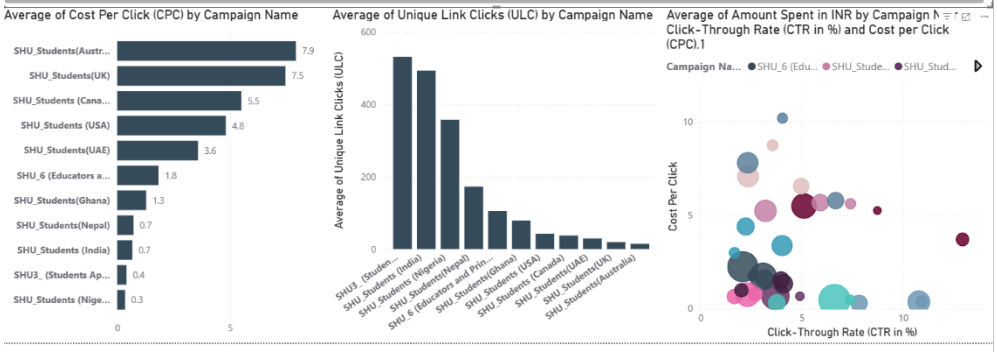
- Below-average engagement (<4%)
- High CPC (above 7.5 INR)
- Low overall performance score (under 0.45)

Segment-Level Observations

- **Student Campaigns in Australia and UK** consistently underperformed relative to other regions.
- **Educators in Group 1 regions (e.g., USA, UK, Canada)** had high engagement and CTRs.
- **Nigeria and Nepal** showed promising CTR and engagement, suggesting strong ROI.

Campaign Name	Average of Cost Per Click (CPC)	Average of Cost per Result (CPR)	Average of Amount Spent in INR	Average of Unique Link Clicks (ULC)	Average of Clicks	Average of Click-Through Rate (CTR in %)
SHU_Students(Australia)	7.92	18.65	283.56	14.67	39.67	4.35
SHU_Students(UK)	7.45	18.65	285.56	19.00	40.33	3.63
SHU_Students (Canada)	5.50	7.93	307.99	37.33	57.00	5.51
SHU_Students (USA)	4.81	9.57	299.23	42.00	59.33	8.93
SHU_Students(UAE)	3.58	9.35	292.09	29.33	80.67	2.65
SHU_6 (Educators and Principals)	1.84	5.13	583.33	105.00	304.50	2.73
SHU_Students(Ghana)	1.28	3.97	279.26	79.00	216.00	3.36
SHU_Students(Nepal)	0.72	2.00	345.08	172.67	473.33	2.23
SHU_Students (India)	0.67	1.06	477.61	493.50	700.00	4.31
SHU3_ (Students Apart from India and US)	0.41	1.03	526.34	531.67	1247.67	5.93
SHU_Students (Nigeria)	0.35	0.90	314.26	357.67	921.67	9.85

Filters



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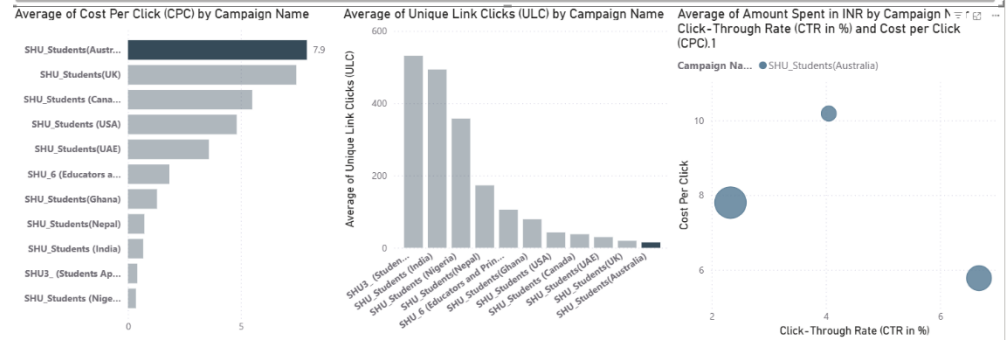

Conclusion

Two ad campaigns — **SHU_Students (Australia)** and **SHU_Students (UK)** — are recommended for **discontinuation** based on their underwhelming performance metrics. This recommendation is backed by robust segmentation, engineered scoring, and data visualizations.

These discontinuations will free up budget and focus for better-performing segments, allowing for strategic reallocation of resources in the upcoming weeks.