**Objective**Assess the effectiveness of various marketing campaigns to refine future marketing strategies and allocate budgets effectively.

**Requirements**

1. **Campaign Metrics Calculation**
   * **Conversion Rate**
   * **Cost per Click (CPC)**
   * **Cost per Conversion (CPA)**
   * **Return on Ad Spend (ROAS)**
2. **Channel Comparison**
   * Analyze campaign performance across different channels using metrics like CTR, conversion rate, CPC, and ROAS.
   * Highlight the top-performing channels based on conversion rates and ROAS.
   * Identify channels with high costs but low ROAS for potential budget adjustments.
3. **Demographic Analysis**
   * Segment campaign performance by demographics (age, gender, location) to pinpoint high- and low-performing segments.
   * Determine which demographic groups respond most effectively to specific channels or types of campaigns.
   * Provide recommendations for future targeting based on demographic insights.
4. **Time-Based Analysis**
   * Monitor campaign performance over time (weekly or monthly) to identify trends or seasonal peaks.
   * Analyze whether certain times of the year result in higher conversions or better ROAS.
5. **Dashboard Requirements**
   * **KPIs Summary:** Include total impressions, total clicks, total conversions, total spend, total revenue, average CTR, and ROAS.
   * **Campaign Performance Overview:** Use bar or line charts to compare key metrics (CTR, conversion rate, ROAS) across campaigns.
   * **Channel Performance Breakdown:** Create visualizations (e.g., pie or stacked bar charts) to illustrate the distribution of total spend, impressions, and conversions by channel.
   * **Demographic Insights:** Present charts showing the breakdown of conversions and revenue by age, gender, and location.
   * **Trend Analysis:** Use line or area charts to display campaign metrics over time (impressions, clicks, conversions).

**Expected Insights**

* **Top-Performing Campaigns and Channels:** Identify which campaigns and channels yield the most conversions and revenue relative to the budget.
* **Demographic Insights:** Determine which customer demographics are most engaged with the campaigns.
* **Seasonal or Temporal Trends:** Uncover patterns in campaign success associated with specific times of the year.
* **Budget Allocation Recommendations:** Recommend reallocating budgets to high-performing channels and campaigns with strong ROAS while reducing spend on underperforming areas.