# ✅ Marketing Campaign ROI & Funnel Optimization — Executive Summary

## **✅ Project Overview**

This project analyses marketing performance using real-like demo data to answer *one big question*:  
**“Which campaigns, channels, segments and geographies drive the best ROI — and how can we reallocate spend to maximize impact?”**

It connects:

* *Real traffic & conversion data*
* *Statistical testing & funnel drop-off analysis*
* *Executive dashboards* for clear, actionable insight

## ✅ Key Business Questions Answered

✔️ Which channels bring the highest ROI?  
✔️ Which campaigns are underperforming?  
✔️ Where do users drop off in the funnel?  
✔️ Which customer segments convert best?  
✔️ Which locations should get more budget?  
✔️ How do CPA & ROI shift if we adjust spend?  
✔️ How are Impressions, Clicks & Conversions trending?  
✔️ What insights guide next-quarter strategy?

## ✅ Solution Approach

### 🔍 Data:

### Used realistic marketing campaign data: Impressions, Clicks, Conversions, Cost, ROI.

### **🗂️ SQL:**

* Created campaign DB, inserted values, ran core queries to calculate CPA, ROI, funnel drop-offs.

### 🐍 Python:

* Cleaned & validated data, did EDA with plots, advanced hypothesis tests (ANOVA, Chi-Square, A/B uplift).

### 📊 Excel:

* Built pivot tables, funnel breakouts, channel comparisons, what-if CPA/ROI scenarios.

### 📈 Power BI:

* Designed a 3-page interactive dashboard:
  + **Page 1:** Executive KPIs & Funnel
  + **Page 2:** Channel & Campaign Deep Dive
  + **Page 3:** Segments, Geo & Trends

### 📌 Outcome:

* Identified budget leaks & high-performing segments
* Recommended budget reallocation
* Delivered live scenario testing for spend adjustment

## ✅ Key Metrics

* **Total Impressions**
* **Clicks**
* **Estimated Conversions**
* **CPA**
* **ROI**
* **CTR**
* **Conversion Funnel Drop-Off**

## ✅ Next Steps

1️⃣ Shift budget from high CPA channels to high ROI segments  
2️⃣ Focus on top converting geographies  
3️⃣ Test new creatives for low CTR channels  
4️⃣ Monitor trends monthly with updated dashboards