# Promotion Effectiveness GAP Analysis

## 📘 Project Summary

This Business Analytics project evaluates the impact of promotions on product sales performance using Zara retail data. It combines Python (Google Colab) for data cleaning and analysis, and Power BI for interactive visualization and reporting. The key objective is to identify whether promotional strategies lead to a measurable increase in sales volume.

## 🛠️ Tools Used

- Python (Pandas, Matplotlib, Seaborn)  
- Google Colab  
- Power BI  
- DAX (Data Analysis Expressions)  
- Microsoft Word / GitHub

## 📊 Key KPIs & DAX Measures

- Average\_Sales\_Promoted  
- Average\_Sales\_Non\_Promoted  
- Total\_Units\_Promoted  
- Total\_Units\_Non\_Promoted  
- Promotion\_Effectiveness\_GAP\_Percent

## 📈 Visualizations

- Area Chart: Total Units Sold by Promotion  
- Scatter Plot: Price vs Sales Volume, Colored by Promotion  
- KPI Cards: Display key performance metrics  
- Text Box: Embedded promotional insight

## 📝 Key Insights

- Promoted products generate significantly more sales volume on average than non-promoted items.  
- The average promotion effectiveness was calculated to be approximately X% more sales (dynamic via DAX).  
- Visualization confirmed strong sales clustering around lower price points for promoted items.  
- Promotion strategy is especially impactful for end-cap and seasonal product placements.

## 📁 Repository Contents

- `zara\_cleaned\_normalized.csv`: Cleaned and normalized dataset  
- `promotion\_gap\_summary.csv`: Aggregated summary of sales volume by promotion  
- `Promotion\_Effectiveness\_GAP\_Analysis.pbix`: Power BI Dashboard  
- `README.docx`: Project summary and documentation