# Project Report: Tiva Clothing Brand - End-to-End Data Analysis

## 🏢 Business Overview:

Tiva is a retail clothing brand offering a variety of fashion products such as dresses, trousers, t-shirts, sleepwear, and shoes. The company operates through multiple channels including e-commerce and mobile apps, and runs promotional campaigns via website banners, social media, email, and app-based marketing.

## 💼 Objective:

The primary goal of this project was to perform an end-to-end data analysis for Tiva Clothing to identify key business trends, understand customer behavior, evaluate marketing effectiveness, and suggest actionable strategies for growth.

## 🔢 Data Analysis Summary:

### 📅 Revenue Trends Over Time

* Daily Revenue: Tuesday recorded the highest total revenue; Thursday had the lowest.
* Monthly Trend: Revenue fluctuated through May and June, with visible spikes around mid-month indicating possible campaign effects.

### 🌍 Customer Demographics by Country

* Top Countries by Customers: France (22.1%), Germany (21.2%), and Italy (19.2%).
* Top Countries by Revenue: Germany (74,591), France (72,301), and Italy (59,458).

### 🌐 Revenue by Age Category

* Top Age Groups: 26-35 (69,466) and 36-45 (68,371) contributed the most to revenue.
* Low Performing: Age group 56-65 generated the lowest revenue (57,844).

### 🏦 Stock Quantity Analysis

* By Category: Dresses and Sleepwear have the highest stock levels (~5,400+), while Pants have the lowest (3,920).
* By Size: XS has the highest stock (4,927), while shoe size 35 has the lowest (882).

### 🌟 Top Products by Sales Volume

* Relaxed Ribbed Trousers, Modern Cotton Tee, and High-Waist Trousers are the top-performing products.

### 🌐 Marketing Channel Effectiveness

* Sales by Campaign: Website Banner (1,151 sales), App Mobile (963), Social Media (120), and Email (19).
* Revenue by Channel:  
   - Website Banner: ~56.1K (50.68%)  
   - App Mobile: ~47.5K (42.12%)  
   - Social Media: ~6K (5.43%)  
   - Email: ~856 (0.77%)
* Customer Acquisition Channel: App Mobile slightly outperformed e-commerce (473 vs. 432 customers).

### 📈 Discounted vs. Non-Discounted Sales

* Only 9.83% of transactions involved discounts.
* Majority (90.17%) were full-priced purchases, indicating strong brand value or pricing strategy.

### 📊 Customer Count Over Time

* Customer engagement followed a similar pattern as revenue, with peaks aligning with campaign periods.

## ❓ Business Problems Solved:

* Low-Performing Channels Identified: Email and social media are underperforming in sales and revenue.
* Inventory Optimization: Identified overstocked and understocked categories/sizes to optimize purchasing.
* Target Audience Segmentation: Age group 26-45 contributes most to revenue, allowing for focused marketing.
* Campaign ROI Visibility: Tracked channel-wise performance to help allocate marketing budget more efficiently.

## ✅ Recommendations for Business Growth:

### 📢 Improve Underperforming Campaigns

* Redesign or reconsider email marketing. Test subject lines, timings, and offers.
* Reassess social media strategy—targeted ads, influencer partnerships, or improved creatives might help.

### 🤔 Boost Stock for High-Demand Categories

* Replenish pants and popular sizes like L and S where demand may soon outpace supply.

### 💼 Focus on High-Performing Channels

* Invest more in website banners and mobile campaigns.
* Introduce app-exclusive deals to further boost mobile performance.

### 👩‍🎓 Age-Specific Promotions

* Design targeted promotions for the 26-45 age group which is most valuable.
* Offer loyalty programs or first-access deals to boost repeat purchase rate.

### ⚖️ Balance Pricing and Discounts

* Gradually introduce discounts in low-converting categories to test price sensitivity.
* Run flash sales or bundle offers instead of reducing prices across the board.

## 📅 Conclusion:

This end-to-end data analysis for Tiva Clothing has uncovered several important insights into customer behavior, product demand, and marketing effectiveness. With targeted strategies and smarter inventory and marketing planning, Tiva can enhance both profitability and customer satisfaction.

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