# Market Analysis Report – Summary of Findings

An online national clothing chain needs to revitalize sales by targeting specific products to specific customers. The chain wants to re-engage lost customers with tailored campaigns, focusing on three products:

* **Shirt ($25)** – for low-to-moderate purchase history customers.
* **Sweater ($100)** – for medium-spending customers.
* **Leather Bag ($1,000)** – for high-spending, high-income customers.

The challenge: identify **which product to advertise to which customer segment**.

## 1. Correlation Between Sales and Income

* **Visual Referenced:** Scatter plot of *Customer Sales (X)* vs *Customer Income (Y)* with regression line.
* **Findings:** The regression model produced an **R² value of 0.78**, indicating a strong positive correlation. As customer sales increase, income also increases.
* **Formula Derived:**

Predicted Income = 72.43×(Customer Sales)+72,638.21

* **Interpretation:** Customers with higher sales also tend to have higher incomes, making income a reliable predictor for purchase potential. The model allows prediction of customer income for any given sales level. For example, a customer with $500 in sales would have an estimated income of approximately $109,853.

## 2. Correlation Between Customer Ratings and Return Rate

* **Visual Referenced:** Scatter plot of *Product Return Rate* vs *Customer Rating (Stars)*.
* **Findings:** The analysis produced an **R² value of 0.69**, suggesting a moderate negative correlation. As return rates increase, customer ratings tend to decline.
* **Interpretation:** Customer satisfaction is closely tied to product reliability; minimizing returns can improve brand ratings and loyalty. Higher product returns are associated with lower ratings. This signals the need to target high-rated products (shirts) more broadly while minimizing returns.

## 3. Customer with the Highest Predicted Income

* **Finding:** **Jon Little** was identified as the customer with both the highest income and the highest spending over the past six months.
* **Interpretation:** This customer represents a high-value target for loyalty and retention initiatives.

## 4. Product to Be Advertised Most

* **Visual Referenced:** Product recommendation table by customer.
* **Findings:**
  + **Shirts**: Most frequently recommended product across customers.
  + **Shirts + Sweaters**: Targeted toward mid-tier customers with higher purchase history.
  + **Shirts, Sweaters & Leather Bags**: Reserved for high-income, high-spending customers.
* **Interpretation:** Shirts should be prioritized in broad advertising campaigns, while upselling sweaters and bags can be used for medium-to-high income segments.

## Geographic Insights with Maps and Heat Maps

* **Findings:**
  + The **map view** allows quick identification of customer locations and distribution.
  + The **heat map view** provides deeper insight into states with higher average incomes, visually highlighting target regions for high-value product campaigns.
* **Interpretation:** Geographic analysis adds a critical layer to marketing strategy, enabling location-based targeting. High-income states should be prioritized for leather bag promotions, while broader campaigns (shirts) can be distributed nationwide.

## Additional Insights from Customer Demographics

* **Average Predicted Income:** $93.35K, with the majority of customers falling in the *High-Medium* and *Medium* income buckets.
* **Average Age:** 45 years, with spending peaking in the **26–50** age range ($287 average spend).
* **Visit Behavior:** Customers aged 26–50 also had the highest average number of visits, reinforcing this as the core target demographic.

## Marketing Strategy Recommendations

Based on the findings:

1. **Shirt Campaigns (Broad Market):** Target customers with low-to-moderate purchase history and income. This broad base ensures reach and volume.
2. **Sweater Upselling (Mid-Tier Customers):** Advertise sweaters alongside shirts to medium-spending customers, encouraging higher-value purchases.
3. **Leather Bag (Premium Customers):** Target only high-spending, high-income individuals (like Jon Little) for luxury campaigns.
4. **Reduce Returns to Improve Ratings:** Focus on product quality and fit to boost satisfaction and minimize returns.
5. **Leverage Predictive Modeling:** Use the regression formula to estimate customer income and segment customers more effectively for personalized marketing.

## Conclusion By leveraging regression modeling, customer segmentation and product recommendation analysis, the clothing chain can align **the right product with the right customer**. Shirts should drive mass engagement, sweaters should upsell to mid-tier spenders and leather bags should target elite high-income customers. This strategy balances reach, revenue and customer satisfaction.