**Market Analysis Report for National Clothing Company**

**Summary Report**

**We have been responsible for developing a targeted marketing campaign to attract customers back to the online national clothing chain companies, which have experienced stagnant sales. Our strategy involves advertising particular products to specific customers in specific locations. The products we have been assigned to promote and sell include a Shirt priced at $25, a Sweater priced at $100, and a leather bag priced at $1000. To achieve our objective, we must answer a set of questions and draw appropriate conclusions.**

1. **What is the correlation (R2 value) between sales and income?**

**Chart, scatter chart

Description automatically generated**

* The scatterplot illustrates a strong positive correlation between income and sales. As customers' income increases, the sales of products also increase. Therefore, income significantly influences the sales of products. With a coefficient of determination of 0.78, we can confidently conclude that there is a robust relationship between these two variables.

1. **What is the correlation (R2 value) between customer ratings and product return rate?**

**Chart, scatter chart

Description automatically generated**

* The scatterplot depicts a noticeable negative correlation between the customer rating and return rate. A higher customer rating is linked with a lower return rate, suggesting that satisfied customers with higher ratings are less likely to return the product. The coefficient of determination, which is 0.69, confirms that there is a moderate association between the two variables.

1. **What are the linear regression formulas to predict customer income from customer sales?**

* By utilizing the inverse of the regression formula **(X = b - Y / -m)** we can estimate our customers' income based on their purchase history for the last six months.

1. **Which Customer do you predict has the highest income?**

Graphical user interface, table

Description automatically generated with medium confidence

* According to the data, Jon Little from Illinois is the customer with the highest income, with a predicted income of $558,143.93. In addition, over the past six months, Jon Little also had the highest purchase amount of $5,250.

1. **Which product will be advertised the most?**

**Graphical user interface, application

Description automatically generated**

* After analyzing the purchase history and predicted income of the currently available list of customers, I suggest the following product recommendations: a sweater for approximately 50.7% of existing customers, which translates to 507 customers, a shirt for about 31.9% of customers, which is 319 customers, and a leather bag for approximately 17.4% of customers, which is 174 customers.