



# MARKET ANALYSIS REPORT FOR NATIONAL CLOTHING CHAIN

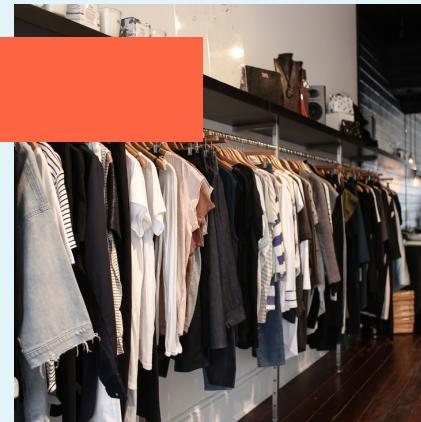
**Prepared for**  
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# ABOUT COMPANY

An online national clothing chain needs to create a targeted marketing campaign. Sales have been flat, and they want to lure lost customers back.

They want to advertise specific products to specific customers in specific locations.

This analysis and report help to determine the best product to advertise to each customer.



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# OUR GOALS

In this project, I will use population statistics from the US Census Bureau to determine where the greatest income exists around the country and whether there is a correlation between sales and income.

We don't know the incomes of our customers, but we should be able to predict it by looking at their purchase history and locations and comparing that against the census data.

Additionally, we want to analyze our inventory, specifically customer ratings and return rate and see if there's a correlation between the two.

Draw conclusions

Analysis Questions:

- 1.What is the correlation (R2 value) between sales and income?
- 2.What is the correlation (R2 value) between customer ratings and product return rate?
- 3.What are the linear regression formulas to predict customer income from customer sales?
- 4.Which customer do you predict has the highest income?
- 5.Which product will be advertised the most?

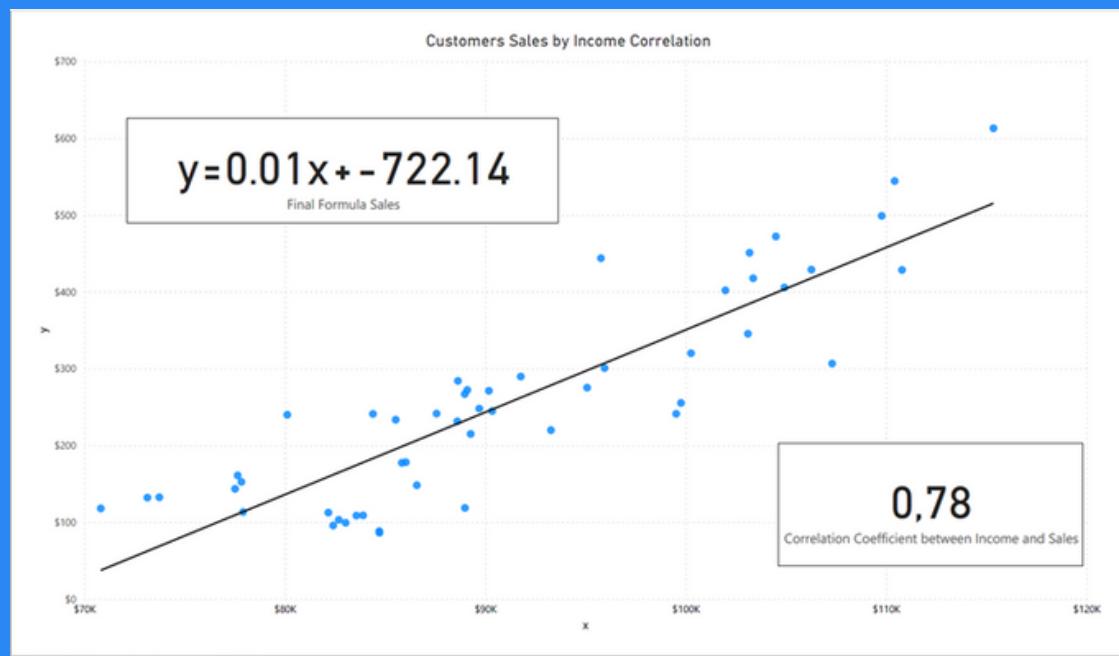
**Objectives**



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

The correlation between Sales and Income is 0.78 meaning that, there is a positive correlation or a direct relationship between the variables.

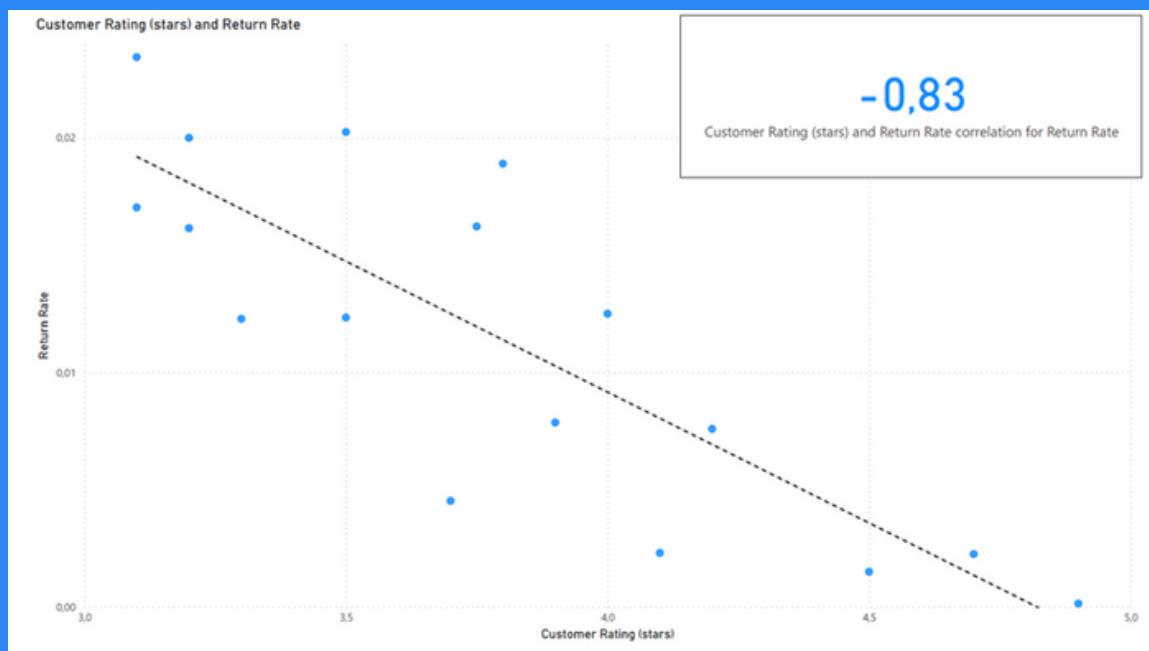
The following chart presents the scatterplot for the linear regression between the variables and the R2 value calculated.



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

The following chart presents the scatterplot for the linear regression between the customer ratings and the product return rate.

The variables have a negative correlation with a R2 value of -0.83, which means that the return rate is reduced with a high customer rating of the product.



### 3.What are the linear regression formulas to predict customer income from customer sales?

Linear regression formulas to predict customer sales

Linear regression formulas to predict customer income:

$$y = 0.01x + -722.14$$

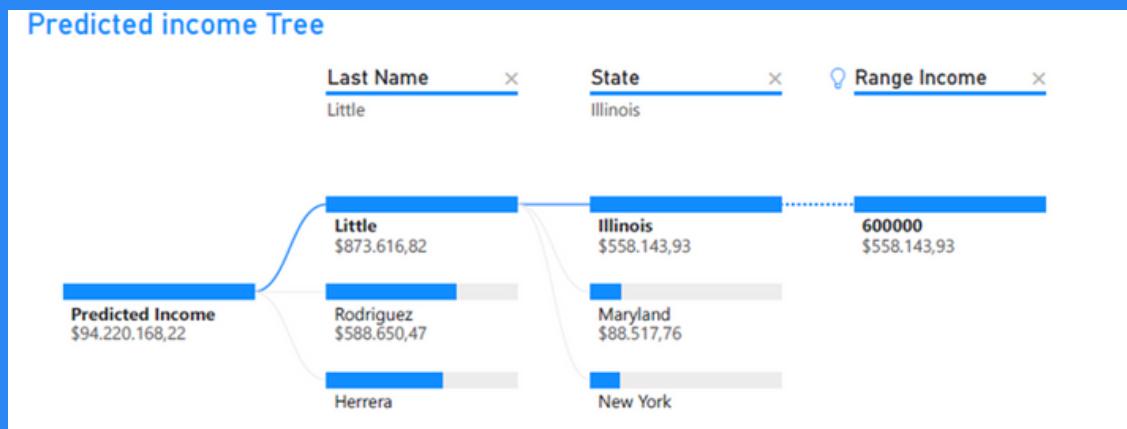
Final Formula Sales

$$x = (-722.14 - y) / -0.011$$

Final Formula Incomes

### 4.Which customer do you predict has the highest income?

The customer with the highest income predicted is Jon Little from Illinois. His predicted income is \$558.143,93. The leather bag it's the product that should be recommended to him.

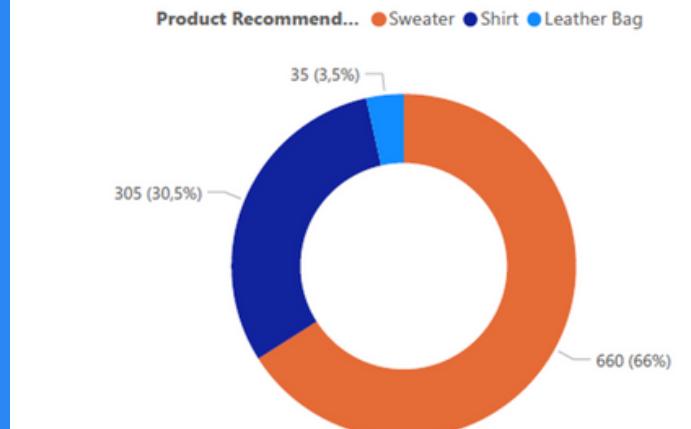


### 5.Which product will be advertised the most?

The most advertised product is going to be the sweater with a \$100 price.

This product is going to be recommended to 660 customers, representing 66% of the products. This analysis is determined using the predicted income and the sales for each customer.

#### Product recommendation



Best and worst performing products comparing the return rate and customer ratings.

# Chronograph Watch

Best Performing product

# Winter Gloves

Worst performing product