



MARKET ANALYSIS SUMMARY FOR NATIONAL CLOTHING CHAIN

*A project submitted
in partial fulfillment of the requirements for the nanodegree of
Data Analysis and Visualization with Power BI*

by

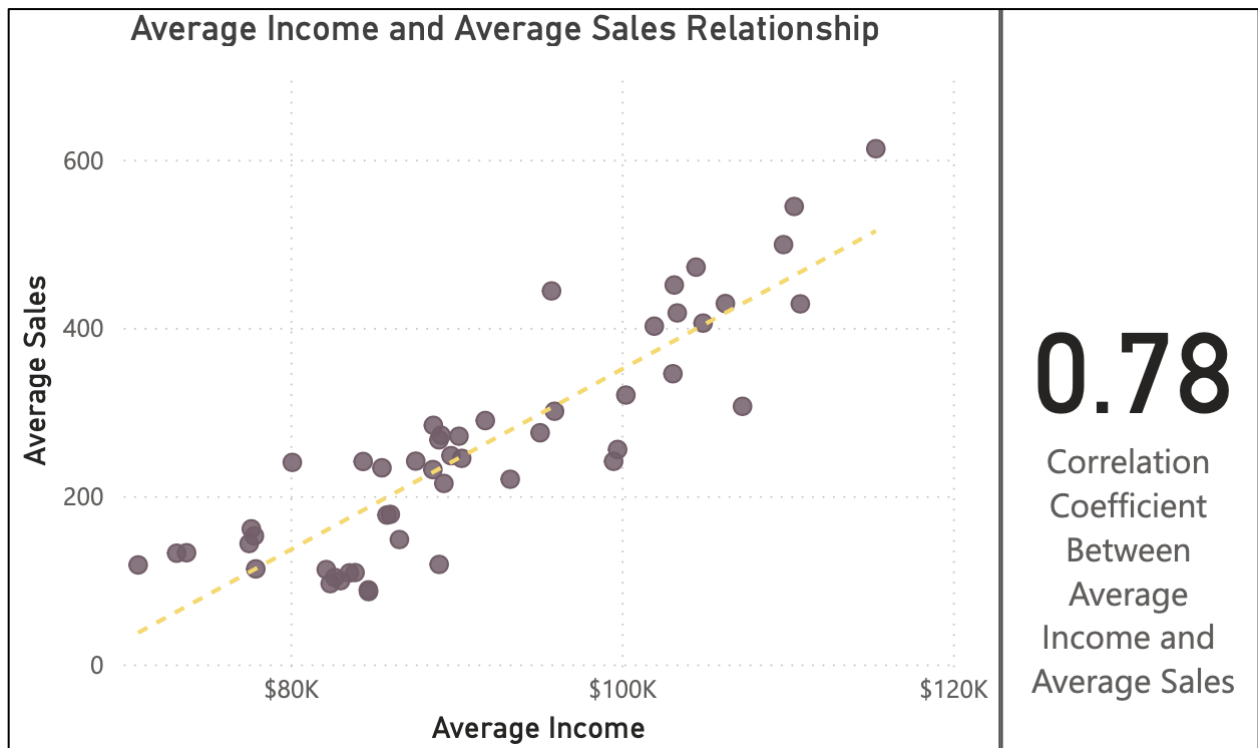
Zainab S. Al Khulaif

Zainab1shafeeq@gmail.com

January, 2025

What is the correlation between Sales and Income?

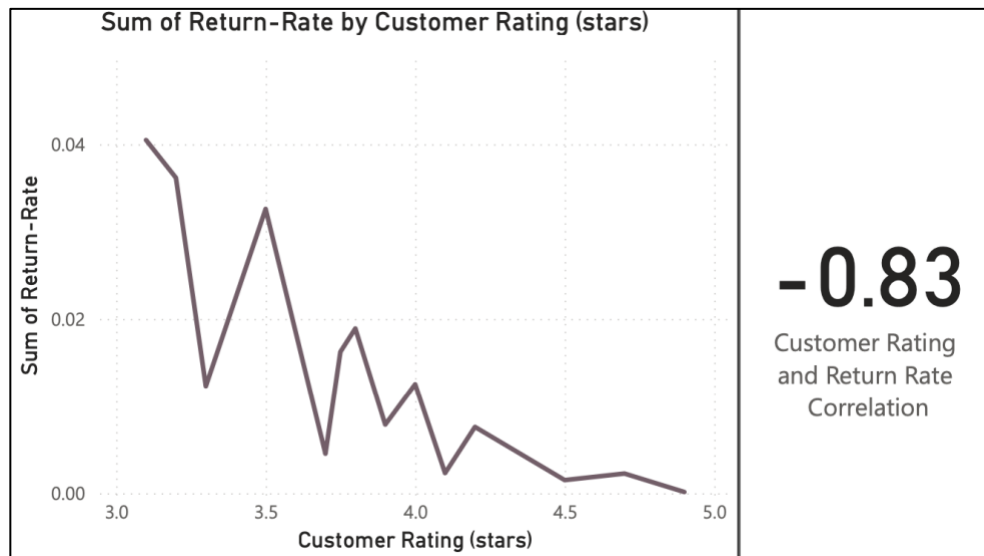
The analysis of the relationship between Sales and Income has revealed a **positive correlation** of **0.78**. Shown below is a scatterplot depicting the linear regression between the two variables. Alongside is the calculated correlation value for clear referencing.



What is the correlation between Customer Ratings and Product Returns Rate?

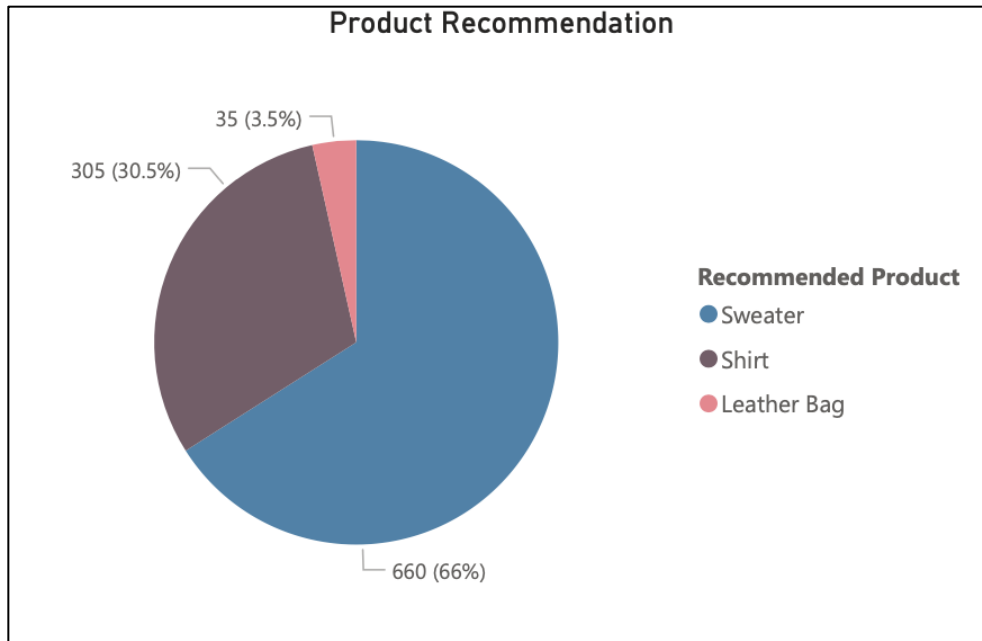
The relationship between Customer Ratings and Return Rate is **strongly negative** with a coefficient of **-0.83**. This signifies a clear inverse relationship: products with higher customer ratings tend to have significantly lower return rates. In other words, customers are less likely to

return products they rate highly. Again, this relationship is visualized in the line plot below, depicting the linear regression between these two variables.



Which product will be advertised the most?

The pie chart below demonstrates the percentages of recommended item. We can clearly figure out the top recommended item is 'Sweater' with 66% of the total recommendations. Therefore, sweater will most likely be the **most** advertised product.

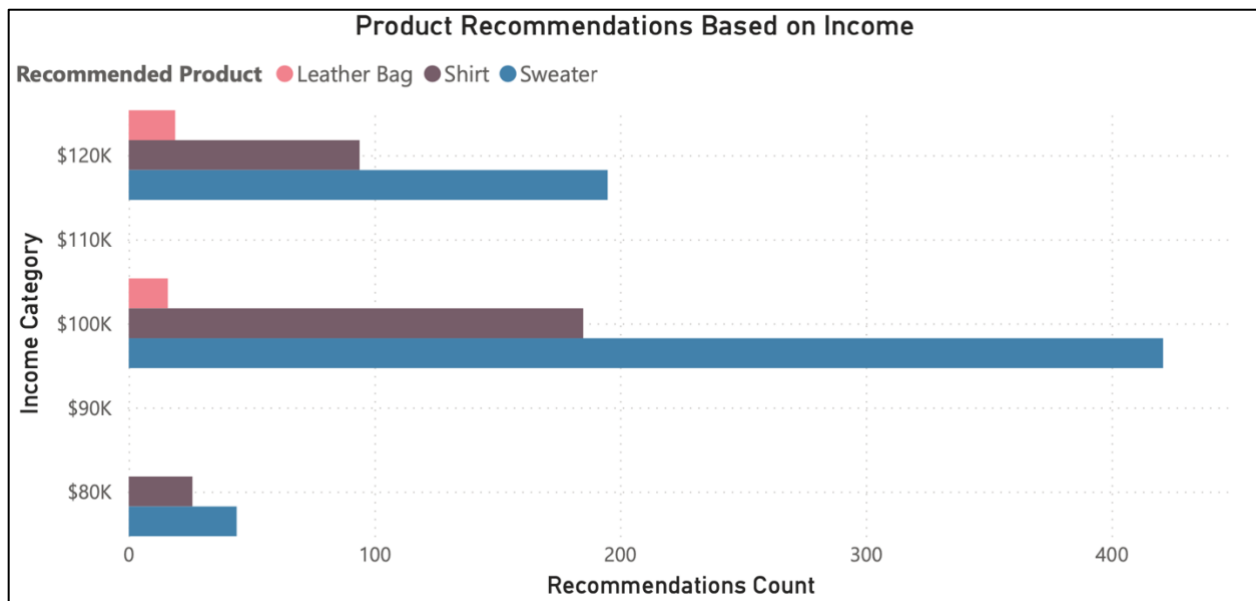
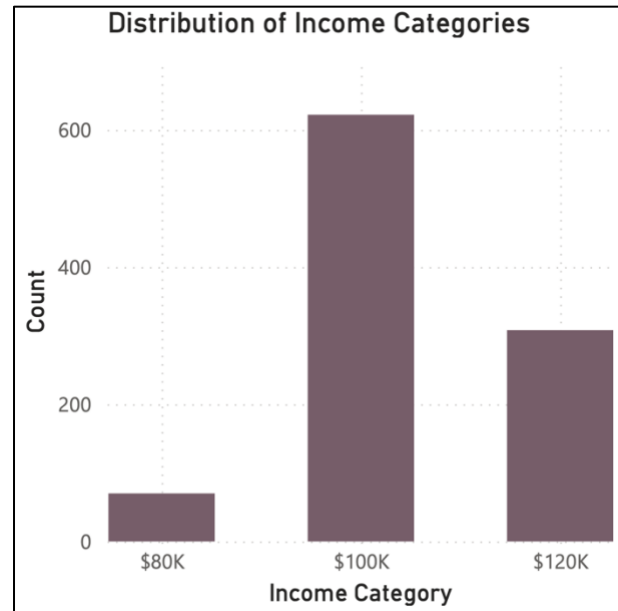


How effective is our product recommendation formula?

0.01 m
$y = 0.01x - 722.14$ Final Formula
-722.14 b

Our Recommendation Formula

The column chart on the right shows the distribution of our customer base across income categories. It reveals a concentration within the middle-income bracket (\$100K), with fewer customers in both the higher (\$120K) and lower (\$80K) income segments. This concludes that most of our customers are middle-income.



The observed recommendation patterns, shown in the above chart, strongly support the effectiveness of our product recommendation system, particularly in aligning product price with customer income levels. As expected, the high-value product is predominantly recommended to customers in the highest income category, demonstrating the system's ability to target luxury items to the appropriate demographic.

What are the best and worst performing products?

*The two cards presented below showcase the products at the **extremes** of performance when considering both Return Rates and Customer Ratings.*

<p>Winter Gloves</p> <p>Worst Performing Product</p>	<p>Chronograph Watch</p> <p>Best Performing Product</p>
---	--

Which customer do you predict has the highest income?

Trivially, the customer with the highest Last 6 Months Purchases.

Customer ID	First Name	Last Name	State	Date of Birth	Last 6 Months Purchases	Predicted Income	Income Category	Recommended Product
JLit30836	Jon	Little	Illinois	Sunday, June 3, 1984	5250	\$558,143	\$600,000	Leather Bag