Module 2: Final Project

Northwind Traders Hypothesis Testing

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Problem Statement

Northwind Traders has some strategic decisions to make but needs to know some information to make an informed decision.

Value Added

1   Higher level of confidence when making strategic decisions

2   Better understanding of the data we have

3   Take emotions and biases out of the decision making process

Methodology

1 Set the Hypothesis that we want to test

2 Identify and gather necessary data from the different database table

3 Determine the type of hypothesis test and calculate statistics needed for that particular test

4 Analyze results and determine what questions are left unanswered

Information we Need

01 | Do discounts affect the quantity of items purchased?

02 | Is there a seasonality to the business?

03 | Which supply regions have lower reorder levels?

04 | Which customers generate higher revenues?
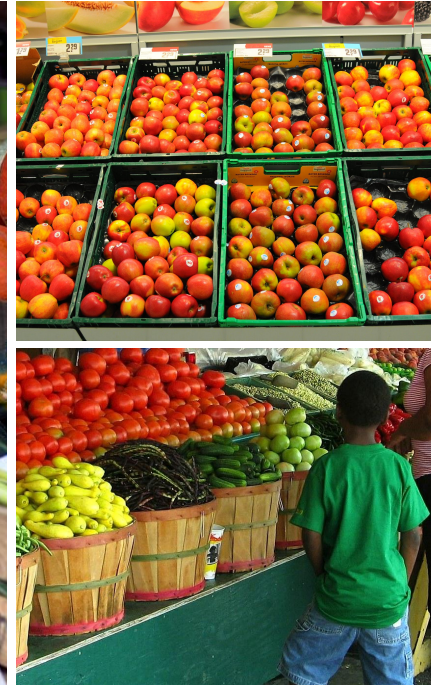
Discount Rates
01

Northwind Traders wanted to know if product discounts affect the quantity of items sold. If so, at what levels were they most successful. We determined that there was an increase in items sold when there was a discount in play but the level of the discount had no statistically significant effect.

Client Implications:
The practice of using discounts to increase sales is still encouraged but to do so at lower discount rates (5% or 10%), increasing the revenue generated from those sales.
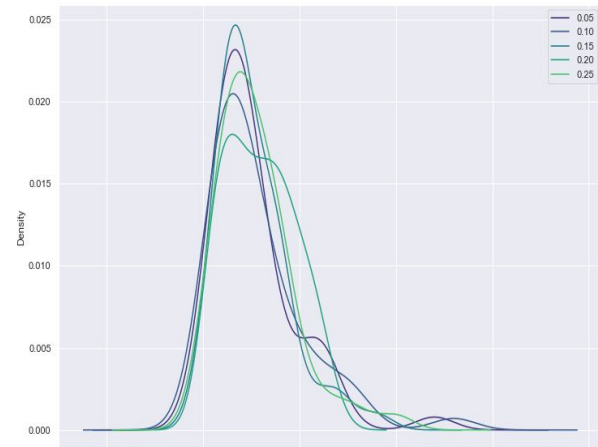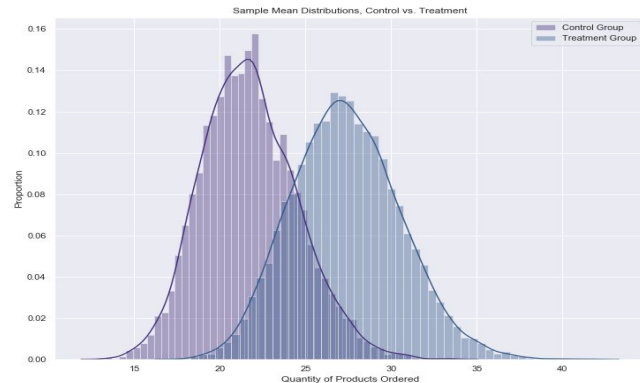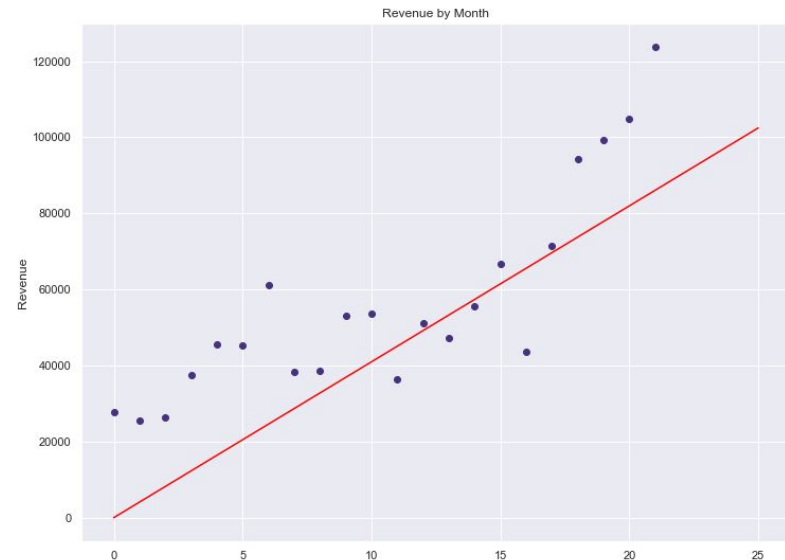
Seasonality

02

Northwind Traders wanted to know if there were seasons where revenues were higher. We determined that there was no statistically significant difference in seasons when adjusted for overall growth..

Client Implications:
Northwind Traders shouldn't adjust income or cash flow projections based on the seasons.


Revenue by Month

Reorder Level by Region

03

Northwind Traders wanted to know if there are regions with lower reorder levels. We found that only East Asia's reorder levels are statistically significant.

Client Implications:
Look further into the differences between East Asia and other regions to determine the cause of the lower reorder levels.

Reorder Level by Region
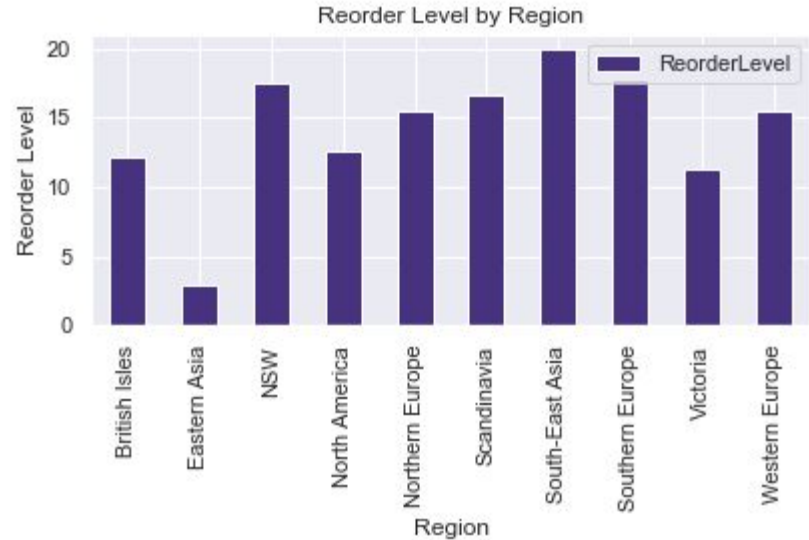
Largest Customers

04

Northwind Traders wanted to know which customers generated the most revenue for the company. We determined that there four customers whose orders generated higher revenues (Ernst Handel, QUICK-Stop, Hungry Owl All-Night Grocers, and Save-a-lot Markets).

Client Implications:
Focus more employee time toward keeping these particular clients happy.