



Module 3 Project

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Northwind Traders

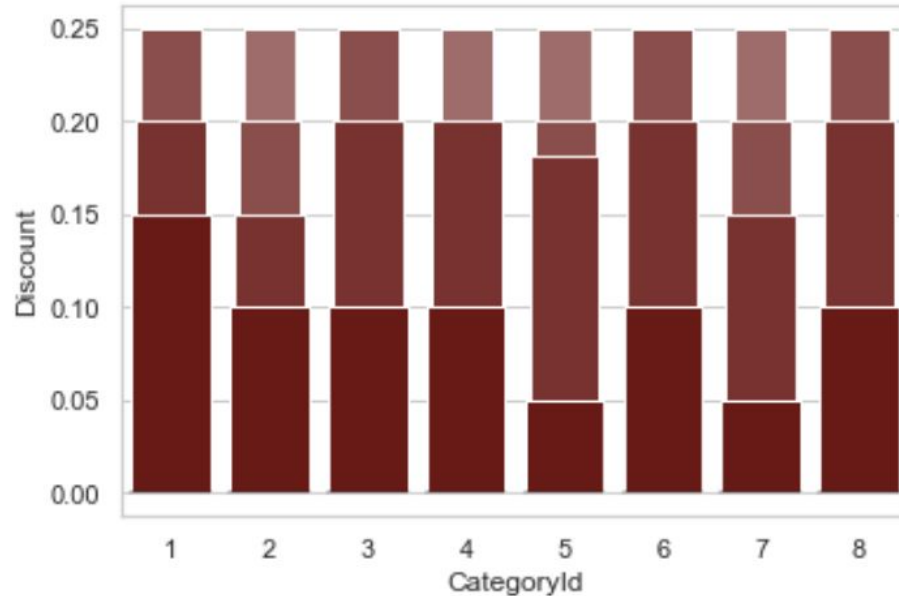
Our database for the project.

Goals:

- Use the data in Northwind traders to help make business decisions that will increase profits.
- We're especially looking for values with a difference that is statistically significant.



Is there a statistically significant difference in discount between categories?



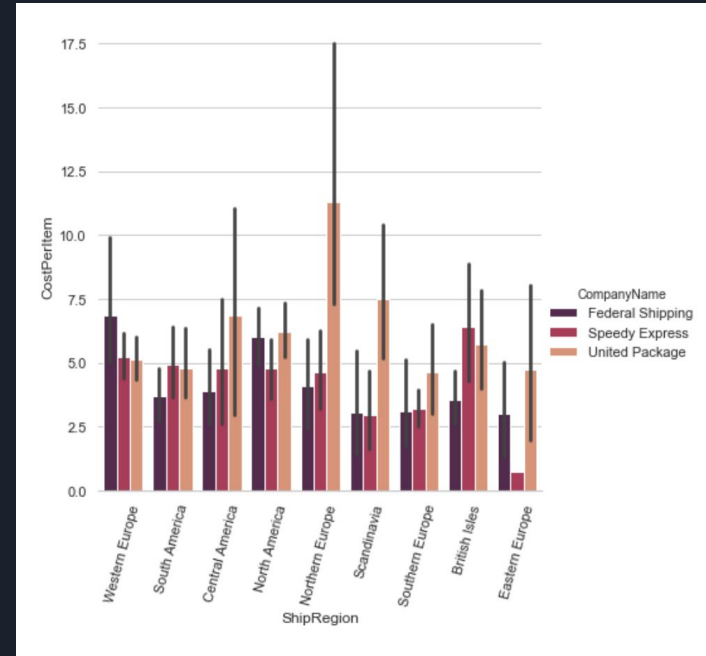
No, there's not.

Our analysis found comparable discounts given between all 8 categories.

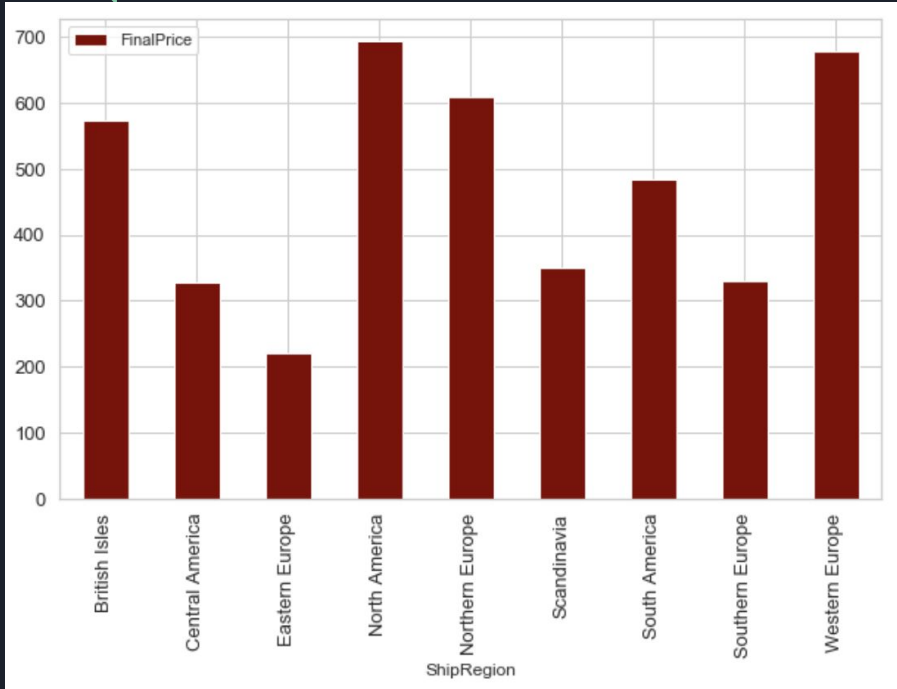
Are shipping rates significantly different by region?

The variance between overall rates is not significant.

When ship to region was considered, the differences became significant.




Is there a statistically significant difference in order value by region?



Yes, it sure does.

In some combinations, the average order price for regions including Southern and Western Europe were found to be significantly different than the average order price in other regions.



Does discount amount have a statistically significant effect on the quantity of a product in an order? If so, at what level(s) of discount?

```
Full price mean: 21.715261958997722  
Discount mean: 27.10978520286396
```

Yes, discount impacts the quantity ordered!



Further Work

There are almost TOO many questions that can be asked of this dataset! Here are a few that could be explored more:

Analysis:

- Calculate money/etc. saved by solution, rather than just suggesting that it's significant

Testing:

- Write a function to spit out only trues from tukey
- None of these datasets required resampling; choose the smallest (by number of entries) and investigate if bootlegging changes the outcome
- Using shipper optimization as an example, test for significance within region as well



Thank you!

Link to Northwind schema:

http://www.unife.it/ing/informazione/Basi_dati/lucidi/materiali-di-laboratorio/esercizi-sql-base-di-dati-northwind

Link to Hillary Green-Lerman's slides:

https://drive.google.com/file/d/1QLUjutlaDBNd8q_PDIOQdWzRV0tFCVSq/view (incredibly helpful for hypothesis testing)