



# Northwind Statistical Analysis

Analyzing hypotheses based on Northwind database sales data.

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# Business Overview

Problem: Testing hypotheses to find discrepancies in Northwind sales data on how the different workings of the sales are performing.

Business Value: Testing these hypotheses will give us a better sense and know-how of where the weak points are in the sales structure in order to achieve higher potential sales performance.



# Method

## Tested four different hypotheses:

Does discount amount effect the average quantity of product per order?

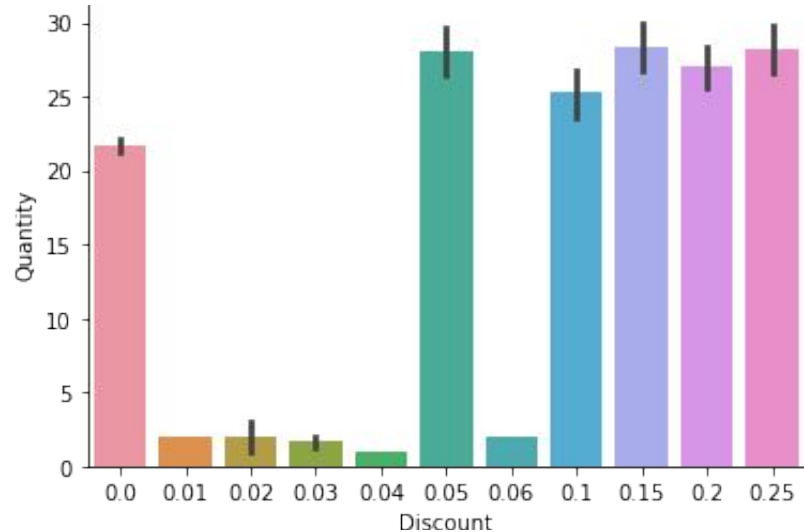
Does discount amount effect the average total spent per order?

Does supplier region effect the average total spent per order?

Does employee effect the average total spent per order?

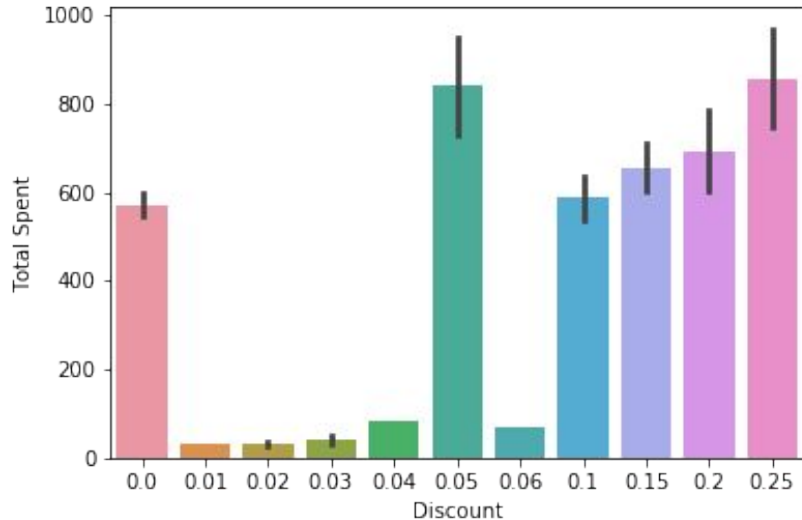
## Discount vs. Quantity

- 5, 10, 15, 20 and 25% had significant effect.
- Minimal difference between the %'s
- Use the 5% discount.



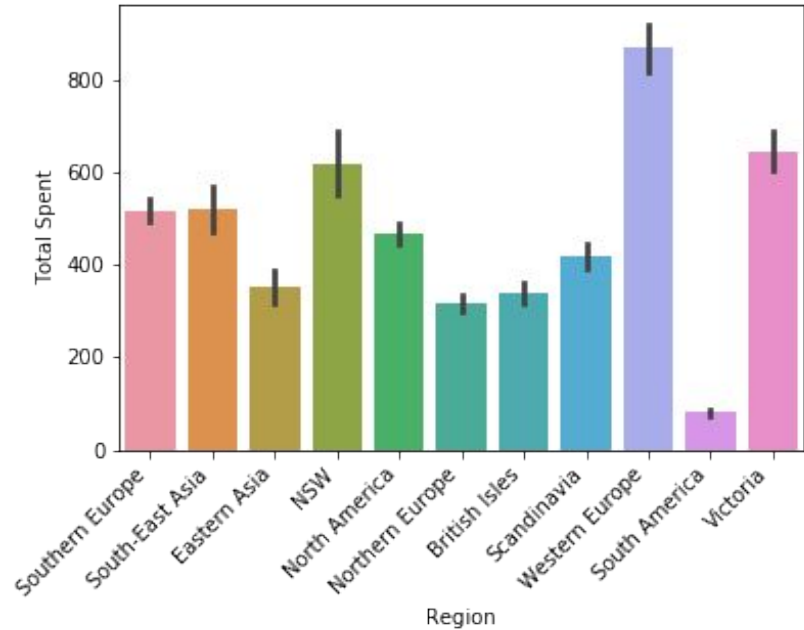
## Discount vs. Total Spent

- 5 and 25% had most significant effect.
- Minimal difference between the %'s
- Use the 5% discount.



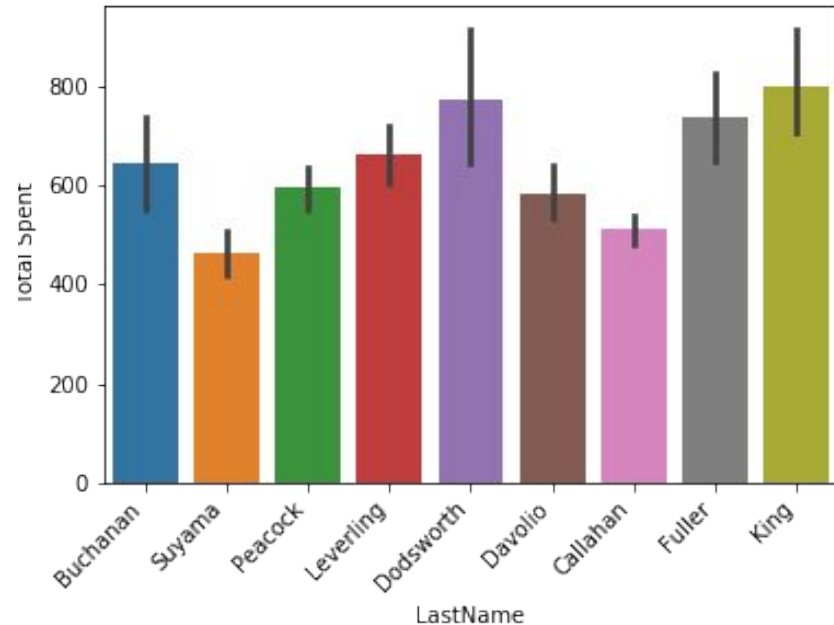
# Supplier Region vs. Total Spent

- Highest average total spent per order: Western Europe, Victoria and NSW.
- Lowest average total spent: South America.
- Analyze what Western Europe is doing to get high average total spent to implement in other countries.



## Employees vs. Total Spent

- No significant impact on average spent per order.
- All employees performed similarly.
- Investigate product pricing and which region each employee is based in.





## Summary & Recommendations

1

5% and 25% were top in pushing sales. Focus on max 5% discount to maintain product quantity moved and profit.

3

Employee performance is split evenly. Investigate specific employee regions and quantity each sold. Focus on customer service and pushing sales further.

2

Western Europe, Victoria and NSW had highest average spent per order. Review product pricing compared to quantity for better insight on performance.





## Future work

Look at trends relating to:

- Top performing products.
  - Under-performing products.
  - Seasonal changes in sales.
  - Comparing product pricing per region.
  - Employee average quantity sold per order.
- Compare to average total spent.





# Thank you.