

# NORTHWIND PRESENTATION



# Objective

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- ❖ To determine factors that influence the quantity of items purchased per transaction
- ❖ To determine factors that could increase your bottom line

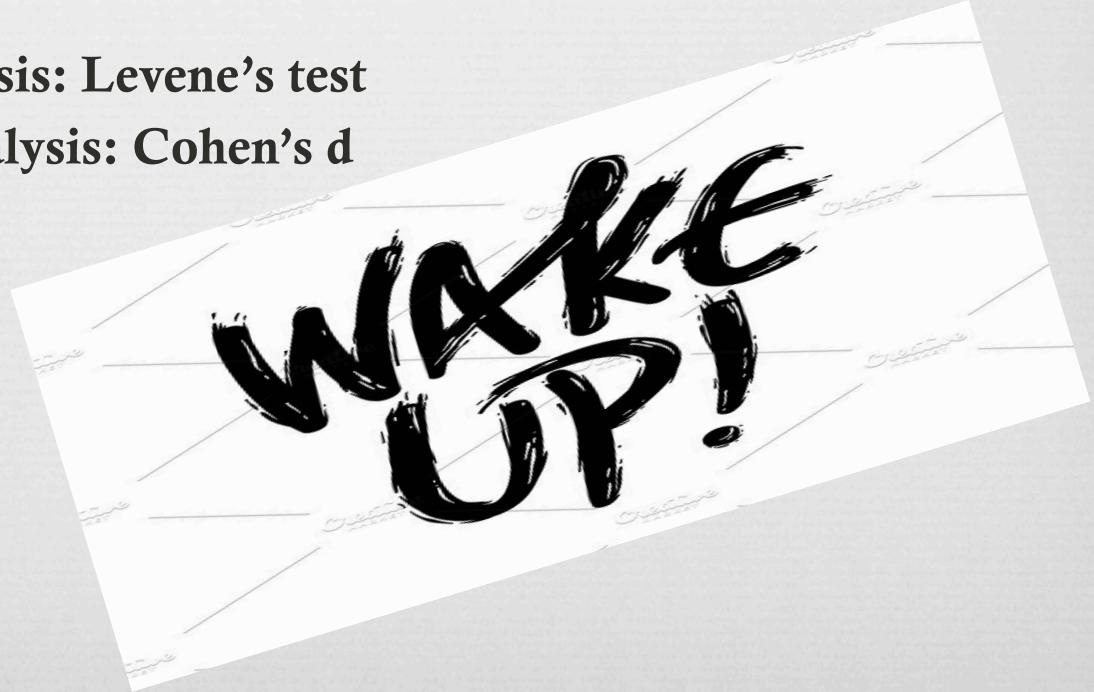


# Methods



## ❖ Statistical Analyses:

- ❖ Multiple Linear Regression
- ❖ Hypothesis testing:
  - ❖ 2 Sample T-Test, ANOVA, Tukey test, Kruskal-Wallis H test
- ❖ Effect Size testing
- ❖ Equal Variance analysis: Levene's test
- ❖ Statistical Power Analysis: Cohen's d



# **Discounts/Quantity of Items Purchased**

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- ❖ Discounts have a significant impact on Quantity Purchased
- ❖ ~20% increase in quantity purchased with a 15% discount
- ❖ ~19% increase in quantity purchased with a 5%

**BOTTOM LINE:**

**LIMIT DISCOUNTS TO 5%**

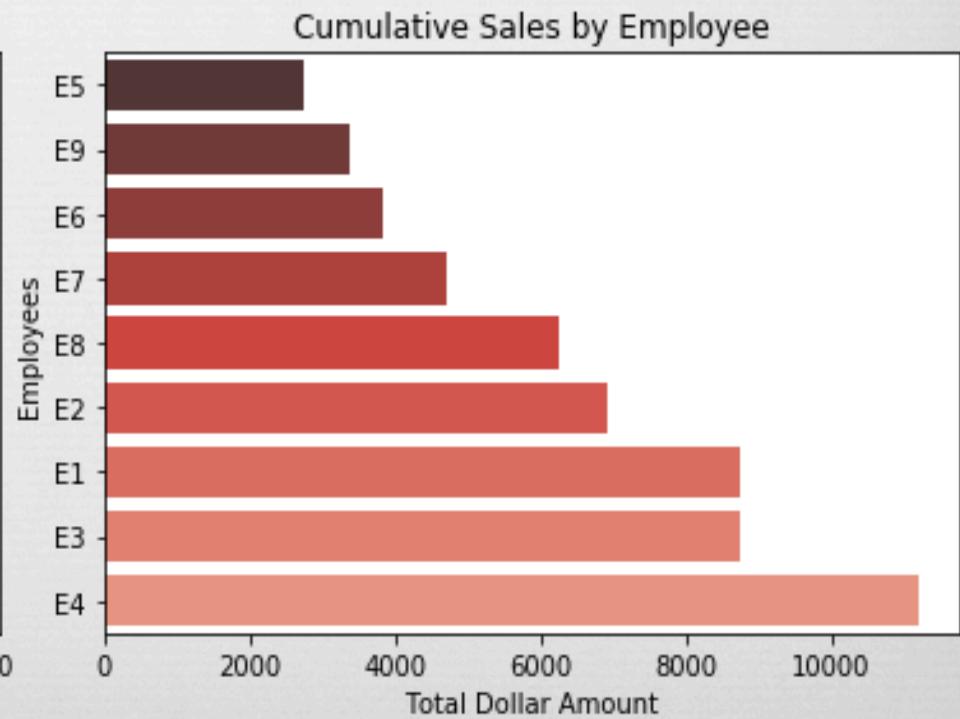
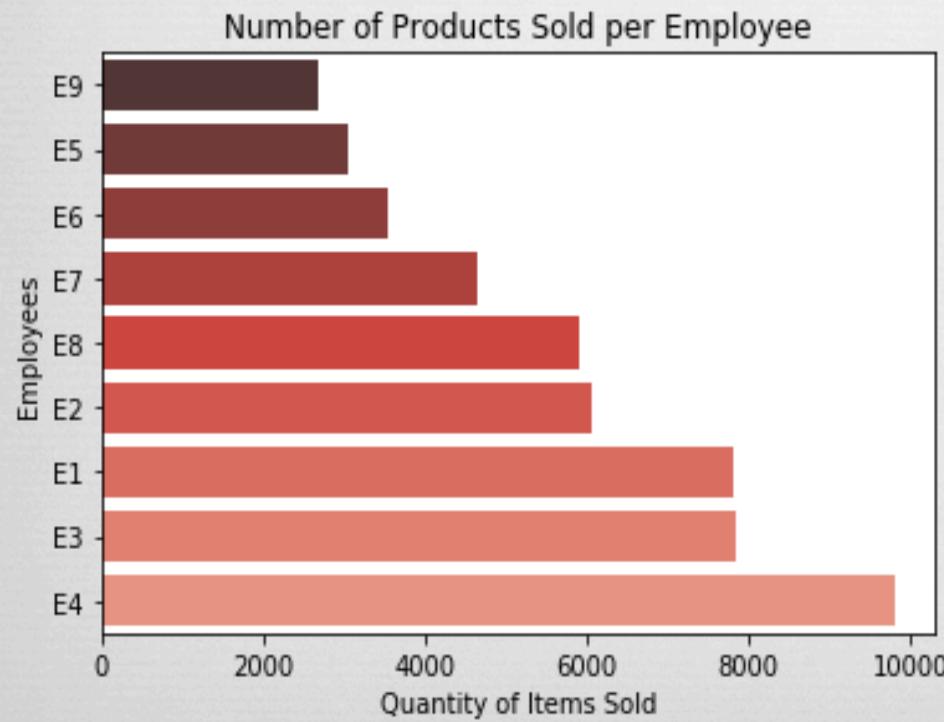
**KEEP YOUR MONEY!**



# Employees/Quantity of Items Purchased

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- ❖ Specific Employees have no significant effect on Quantity Purchased
- ❖ But that's not the whole picture!



# Country/Quantity of Items Purchased

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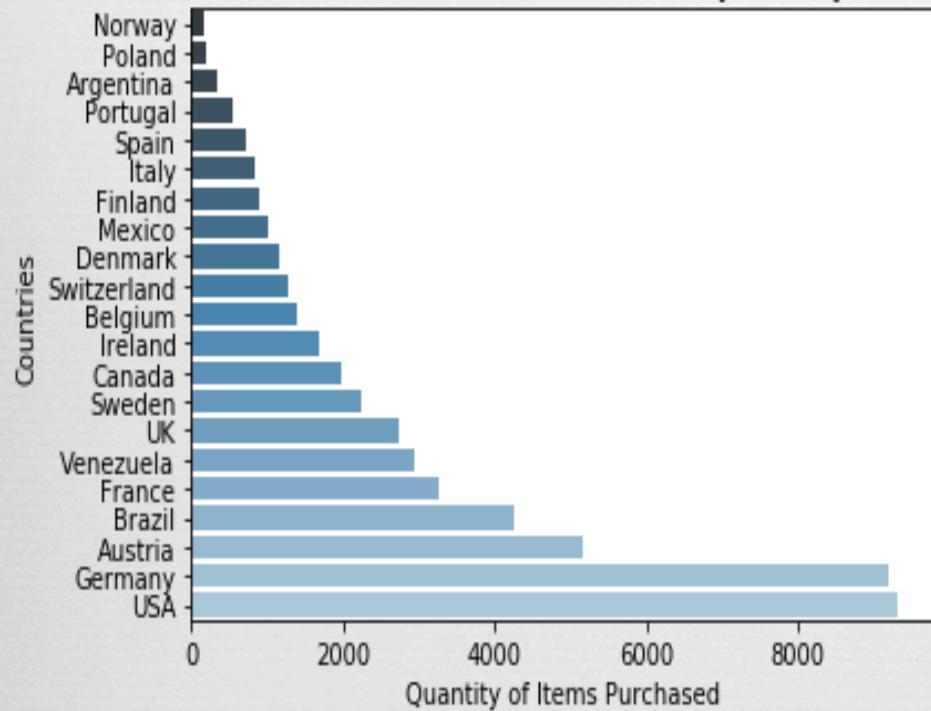
- ❖ Certain Countries purchase significantly more items (per order)
- ❖ Countries that purchase significantly **more than** the average quantity per order include:
  - ❖ Austria, Ireland, Germany, USA, Canada



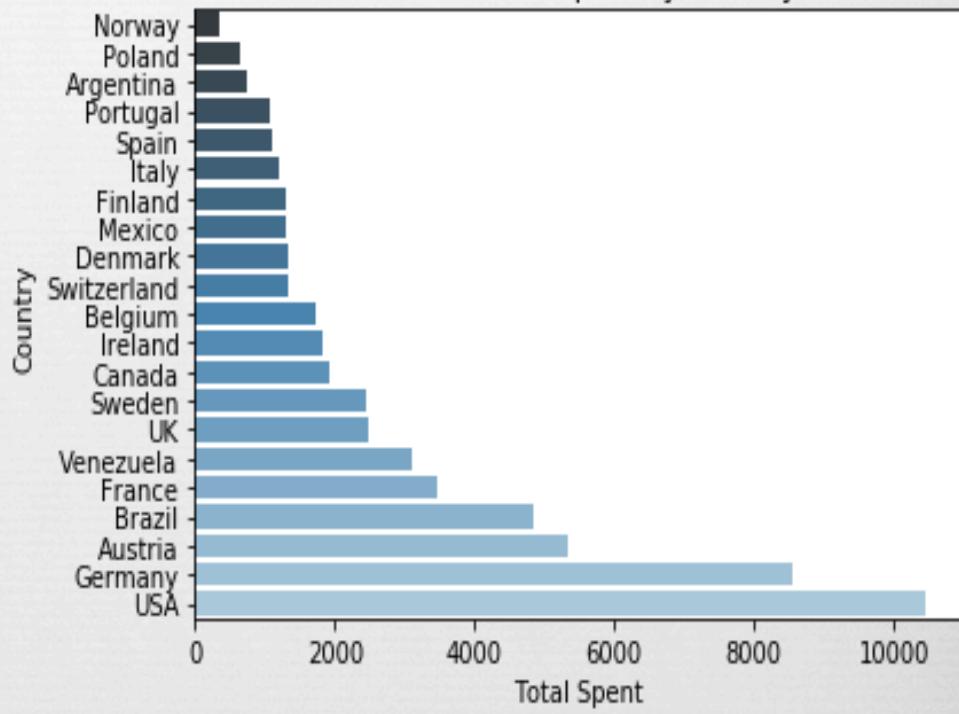
# UK v Germany



Number of Products Purchased by Country



Total Amount Spent by Country



**Germany purchases 28% more products per order on average when compared to the UK**

**Consider moving headquarters from the UK to Germany**

# Meat and Vegetarian Food Items

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- ❖ Total of 2,551 Vegetarian Items purchased
- ❖ Total of 9,158 Meat Items
- ❖ There is no significant difference in quantity of vegetarian products ordered vs. meat products ordered per order.



# Conclusions & Recommendations

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- ❖ Discounts do have an impact on quantity per order
  - ❖ Keep discounts minimum → Keep your money!
- ❖ Certain countries purchase more on average per order than others.
  - ❖ Consider moving headquarters from the UK to Germany
- ❖ There is no statistical significance comparing vegetarian products to meat products in terms of quantity of items ordered
  - ❖ Consider investigating other categories of products
- ❖ Specific Employees have no impact on the quantity per order
  - ❖ Implement incentive programs to increase competition

# Future Work



- ❖ Examine specific customer trends
- ❖ Examine employee sales adjusting for hire-date
- ❖ Examine other product categories
- ❖ Examine margins

**THANK YOU!**