

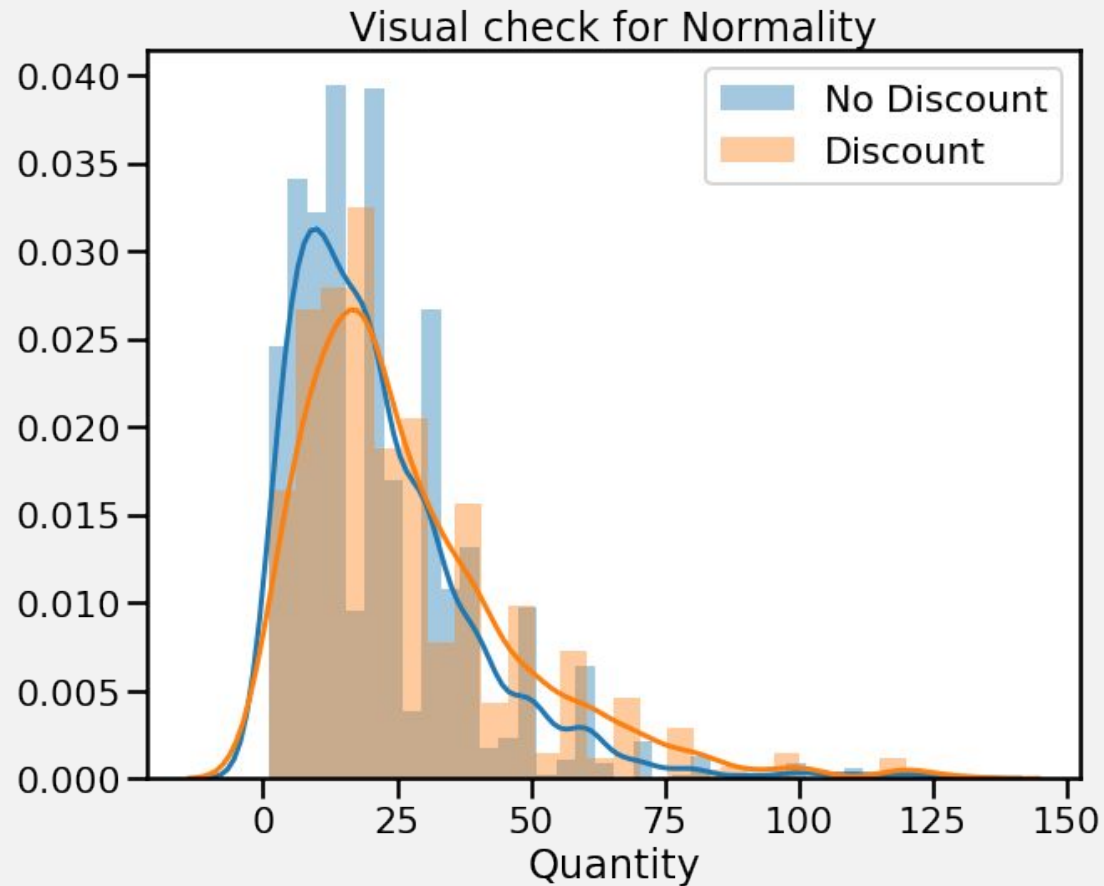
BUSINESS ANALYSES USING THE NORTHWIND DATASET

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WHAT IS THE NORTHWIND DATASET?

- Northwind is a SQL dataset created by Microsoft
- Tables or Categories include:
 - Employees
 - Customers
 - Products
 - Orders
 - Etc.
- This presentation will show a few statistical relationships between tables

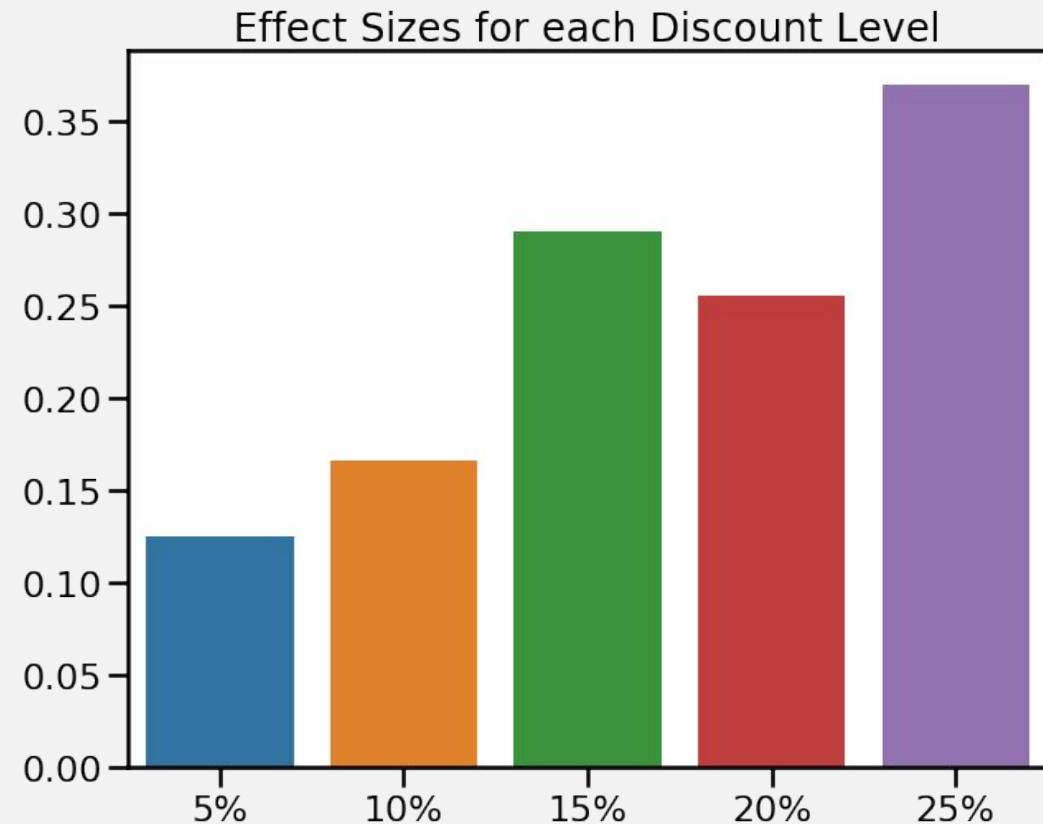
CASE 1: DO DISCOUNT AMOUNTS HAVE A STATISTICALLY SIGNIFICANT EFFECT ON THE QUANTITY OF A PRODUCT IN AN ORDER?



- Discounts assessed 5%, 10%, 15%, 20%, 25%
- Should discounts be offered?

BUSINESS ANALYSIS:

- 15% and 25% had largest effect.
- 5% had lowest effect
- How to use this to your advantage?
 - Help push products
 - Boost sales of old/new products
 - Get rid of inventory

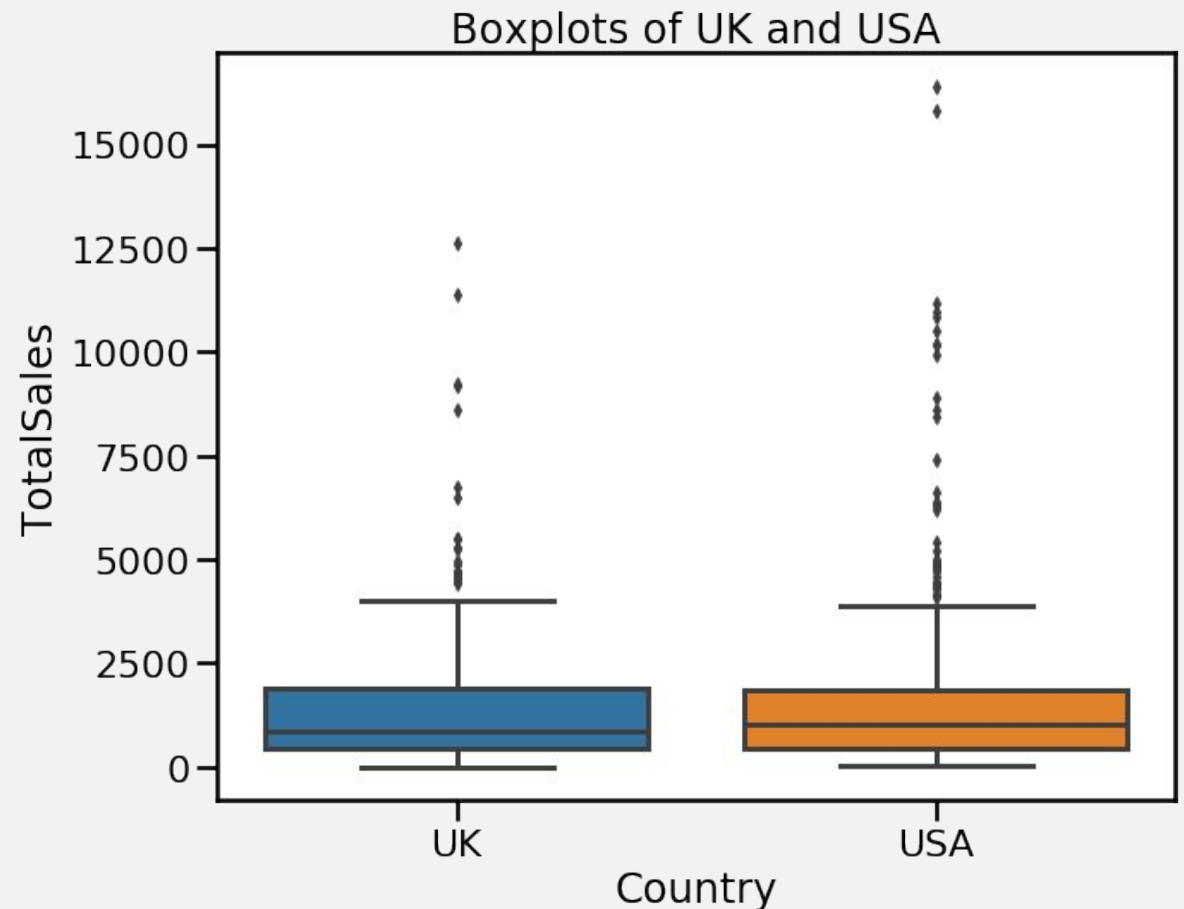


FURTHER ACTIONS FOR CASE I:

- Find exact profit from each discount level
- Compare to no discount
- Maximize profit levels using discounts

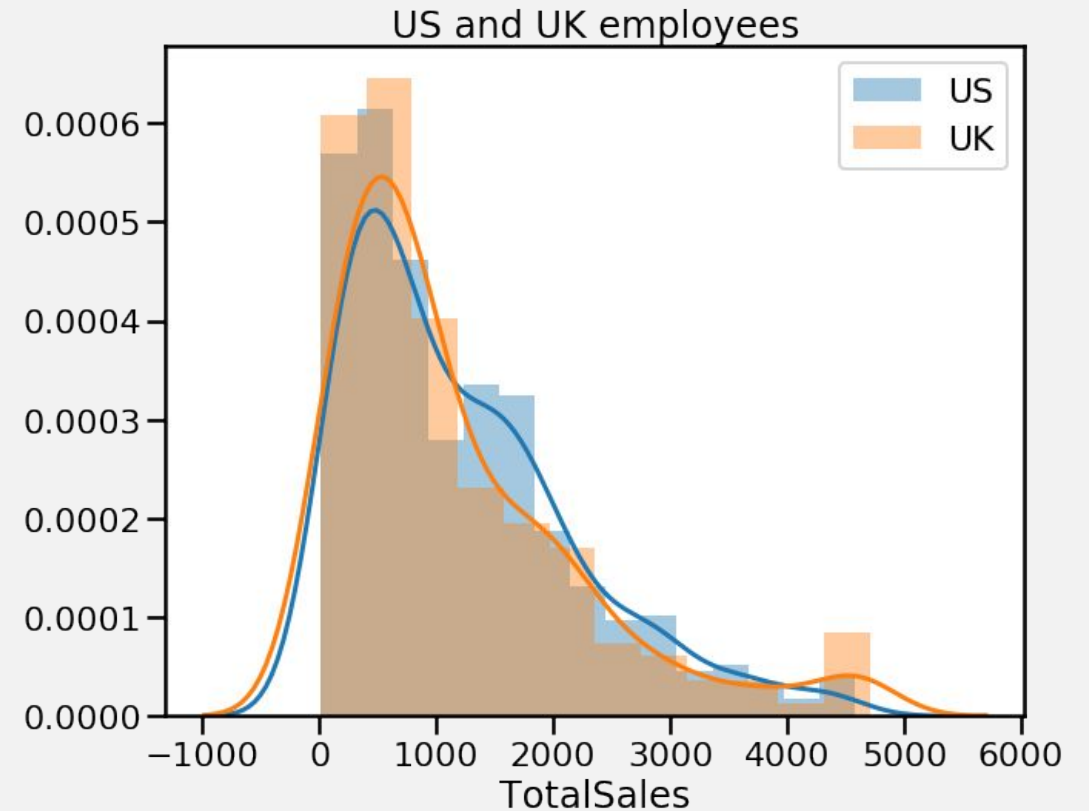
CASE 2: DO US EMPLOYEES SELL SIGNIFICANTLY MORE PER ORDER THAN UK EMPLOYEES?

- Does one country perform better?
- Very similar average sale price
- Looking at plot:
 - A lot in common
 - Boxes are similar sizes



BUSINESS ANALYSIS:

- After running tests...
- no difference in average sales
- P-value = 0.9, no significance
- US has ~600 sales
- UK has ~200 sales

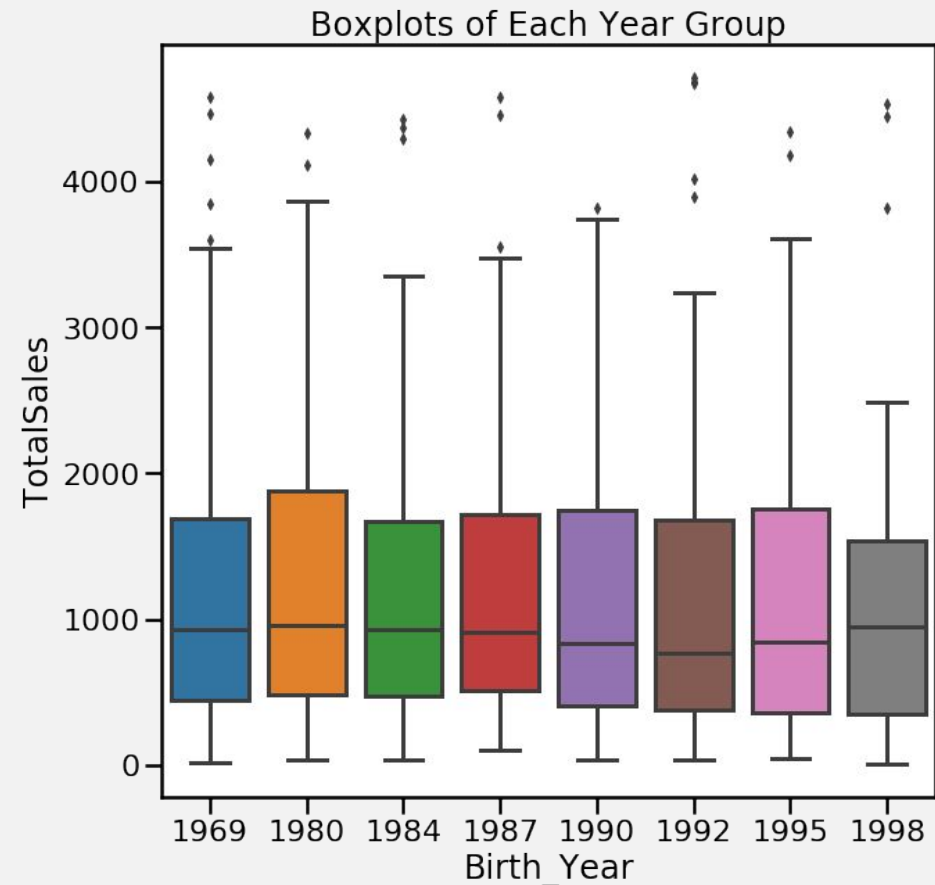


FUTURE WORK

- Why does the UK sell less?
- Look to see if products differ?
- Look to see what is different from US an UK

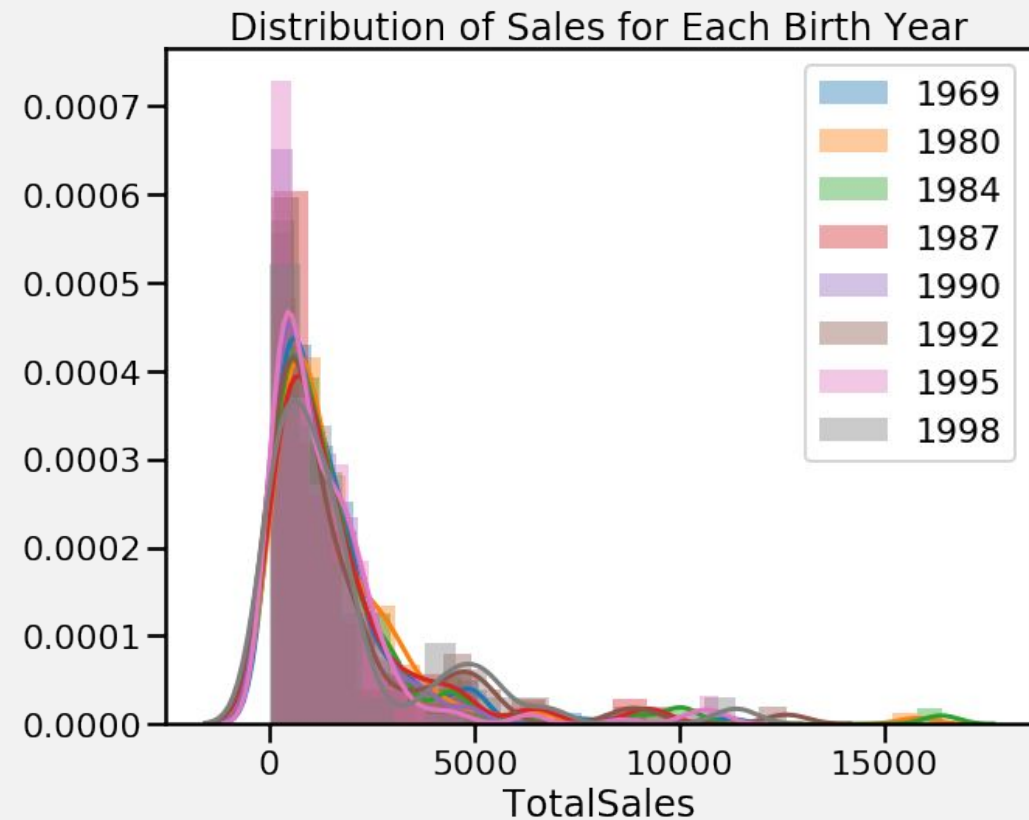
CASE 3: DOES AN EMPLOYEE'S AGE HAVE A STATISTICALLY SIGNIFICANT EFFECT ON ORDER TOTALS?

- Have a similar average of sales
- No year significantly outperforms another visually



BUSINESS ANALYSIS:

- After running tests...
- No significant differences in each year
- All employees sell about the same regardless of age

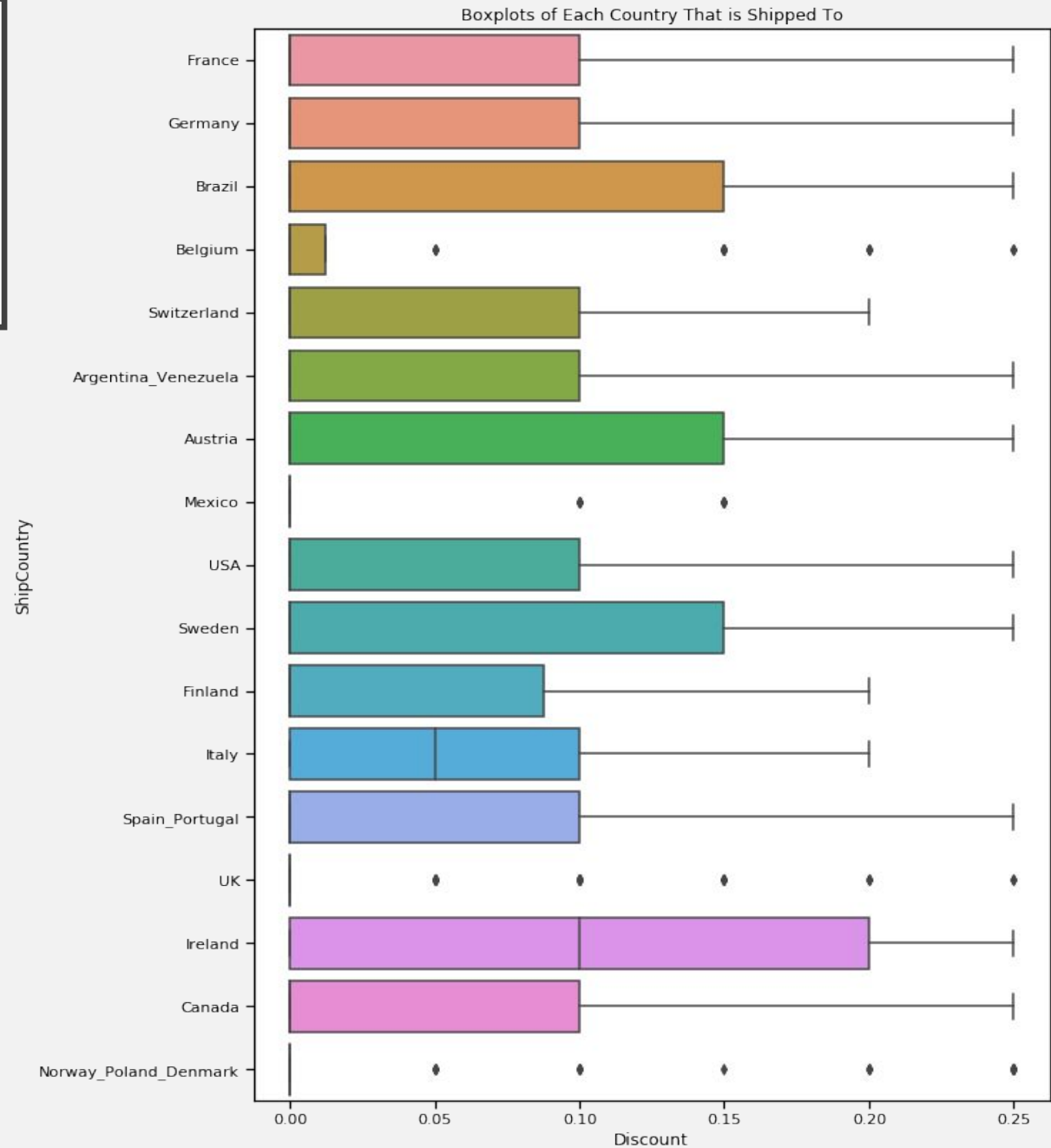


FUTURE WORK

- Combine case 2 and 3
 - What ages work in what country
 - Difference between ages and country

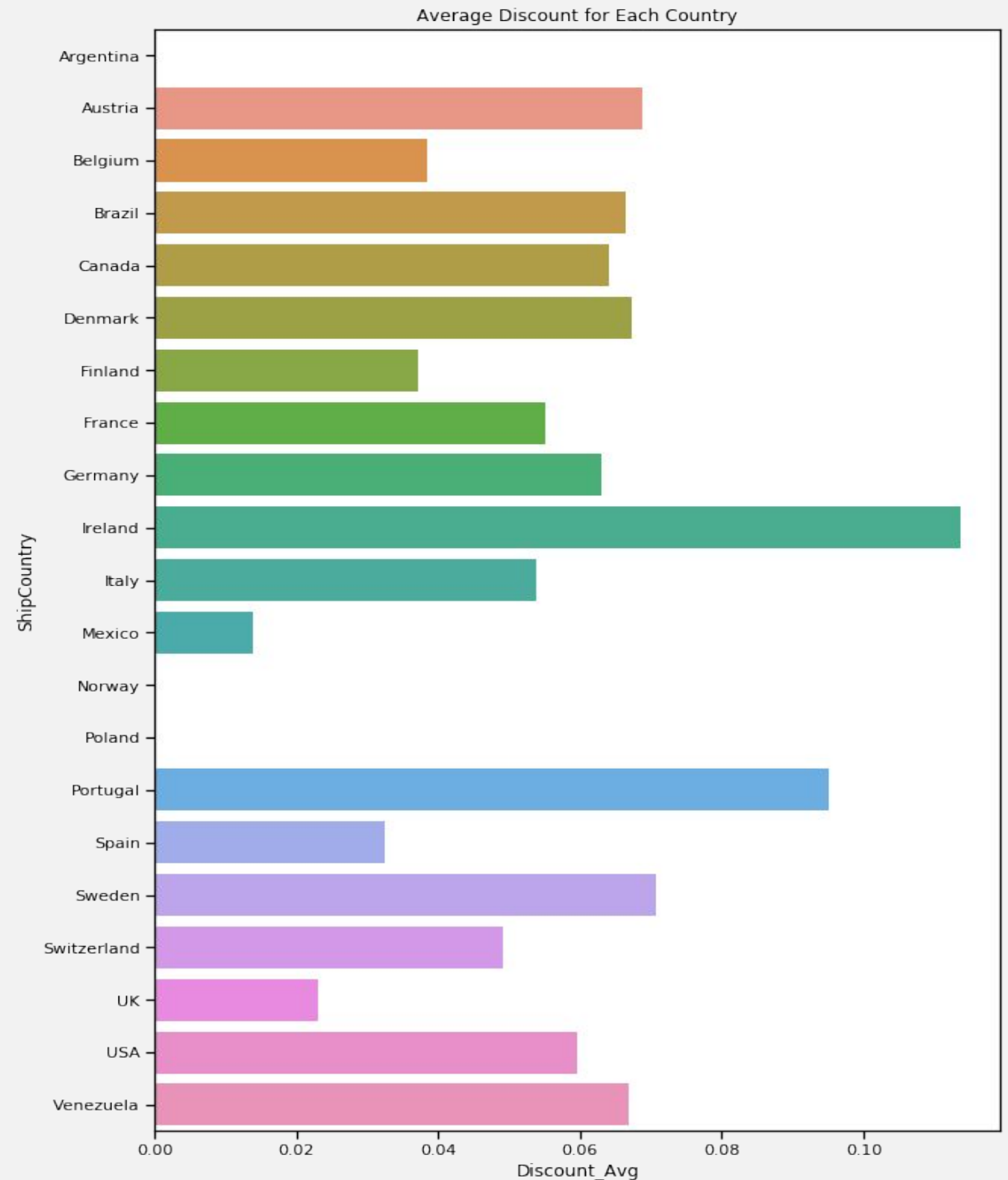
CASE 4: DO COUNTRIES SHIPPED TO HAVE A STATISTICALLY SIGNIFICANT EFFECT ON DISCOUNTS

- Boxplot of each country and discounts used
- Most have an average of 0
- Some have a lot of discounts



BUSINESS ANALYSIS

- Norway and Poland use no discounts
- Ireland uses the highest and then Portugal
- There is a correlation between ship country and discount
 - Just not sure for which



FUTURE WORK

- Discover which countries have highest statistical significance
- Are higher profits made with higher discounts
 - Or vice-versa
- Do countries receive un-necesarry discounts
 - Do profits suffer from these?

CONCLUSION

- This is only the beginning of testing
- Many more questions are raised from each case
- Further research is advised