

Statistical Answers to Business Questions

...

An Analysis of the Northwind Database

List of Questions Being Asked

- What discounts should be offered, if any?
- What quarters saw the weakest sales, and what can be done about it?
- Are some employees selling more than their colleagues?
- Is there a different approach to sales between US and UK offices?

Methodology

- Analyzed sales data from Q3 2012 to Q2 2014
- Used statistical tests to find impactful factors on sales volume

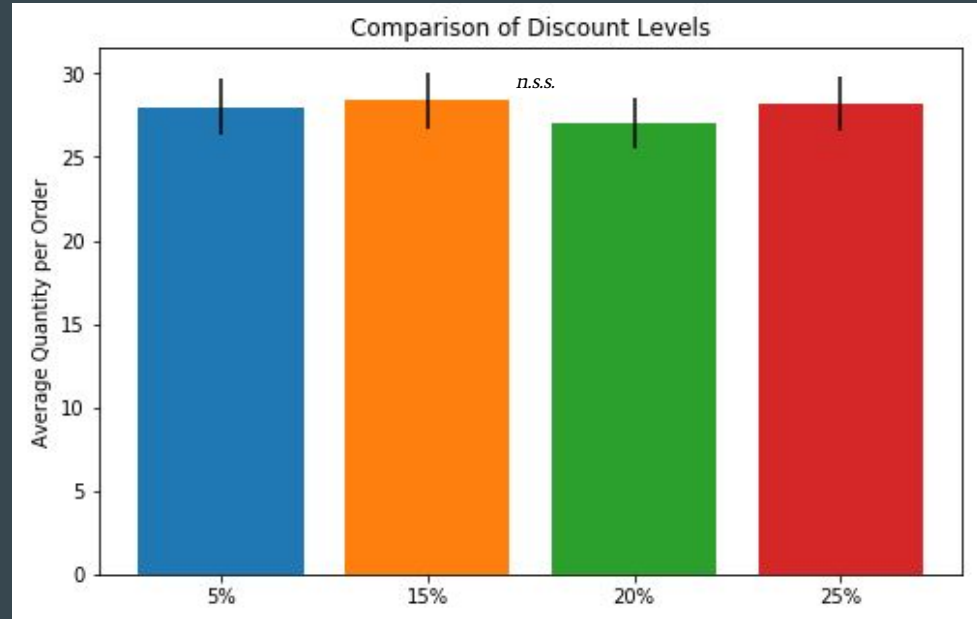
Discounts

- Discounts of 5%, 15%, 20%, and 25% all lead to higher sales volume
- 5%, 15%, 20%, and 25% are all just as effective as each other



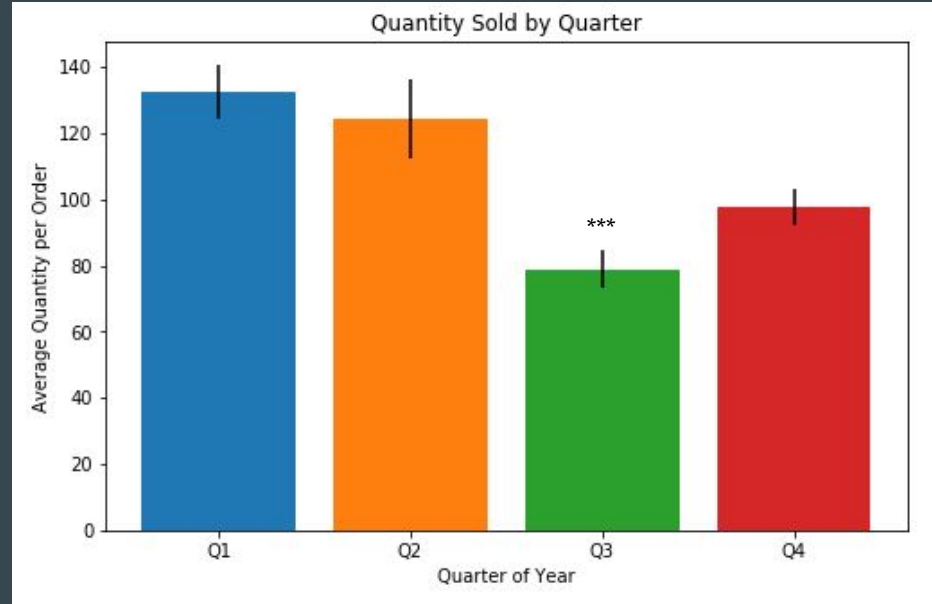
Differences Between Discount Levels

- No difference in sales volume per order between the listed discount levels



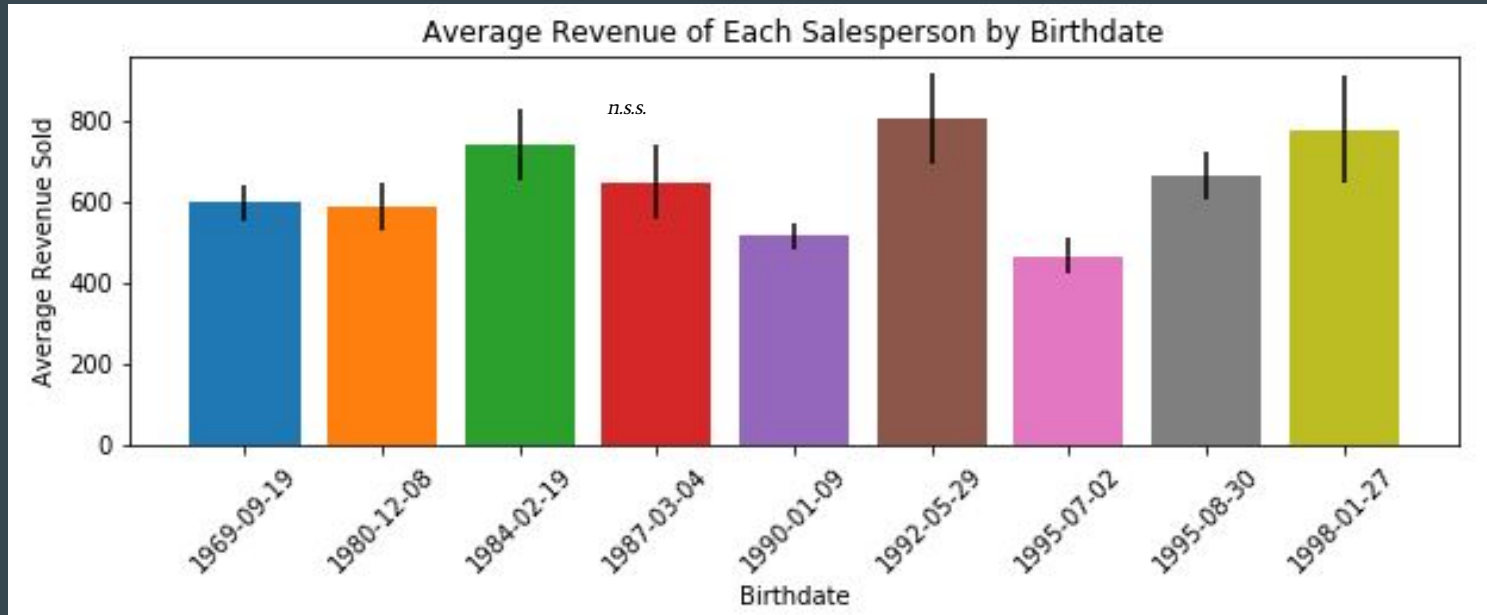
Quarterly Sales

- Q3 and Q4 have lowest average quantity per order of the year



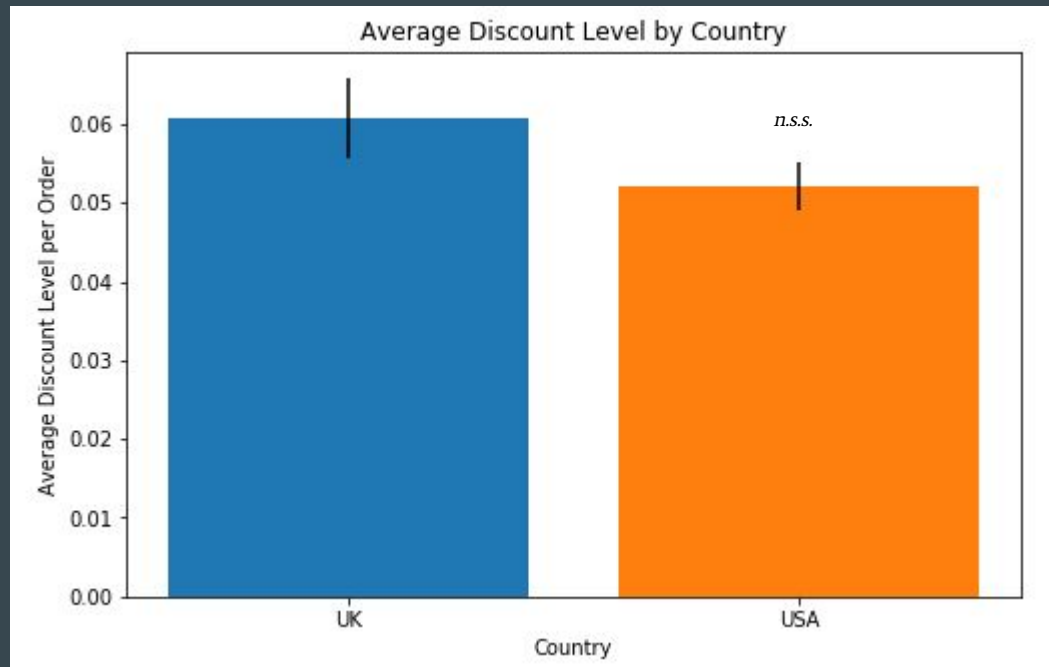
Are Sales Staff Outperforming Their Peers?

- No statistical difference in sales per order among sales staff



Who's Giving Out The Discounts?

- Marginal difference, if any, between UK and US offices



Summary Recap

- Discount levels of 5%, 15%, 20%, and 25% all result in higher order volumes.
- A discount of 5% is just as effective at moving product as a 25% discount.
- Q1 and Q2 average sales volume is higher than Q3 and Q4.

Recommendations

- Sales efforts should be focused in the later half of the year
- Offer 5% discounts to increase sales volume

Further Research

- Obtain more granular view of time-based sales (e.g. month-to-month instead of quarter-to-quarter, etc.)
- Answer questions related to customer service (e.g. likelihood of a customer reordering after a late shipment, etc.)

Thank you!

...