Evaluating the discount strategy at Northwind Traders

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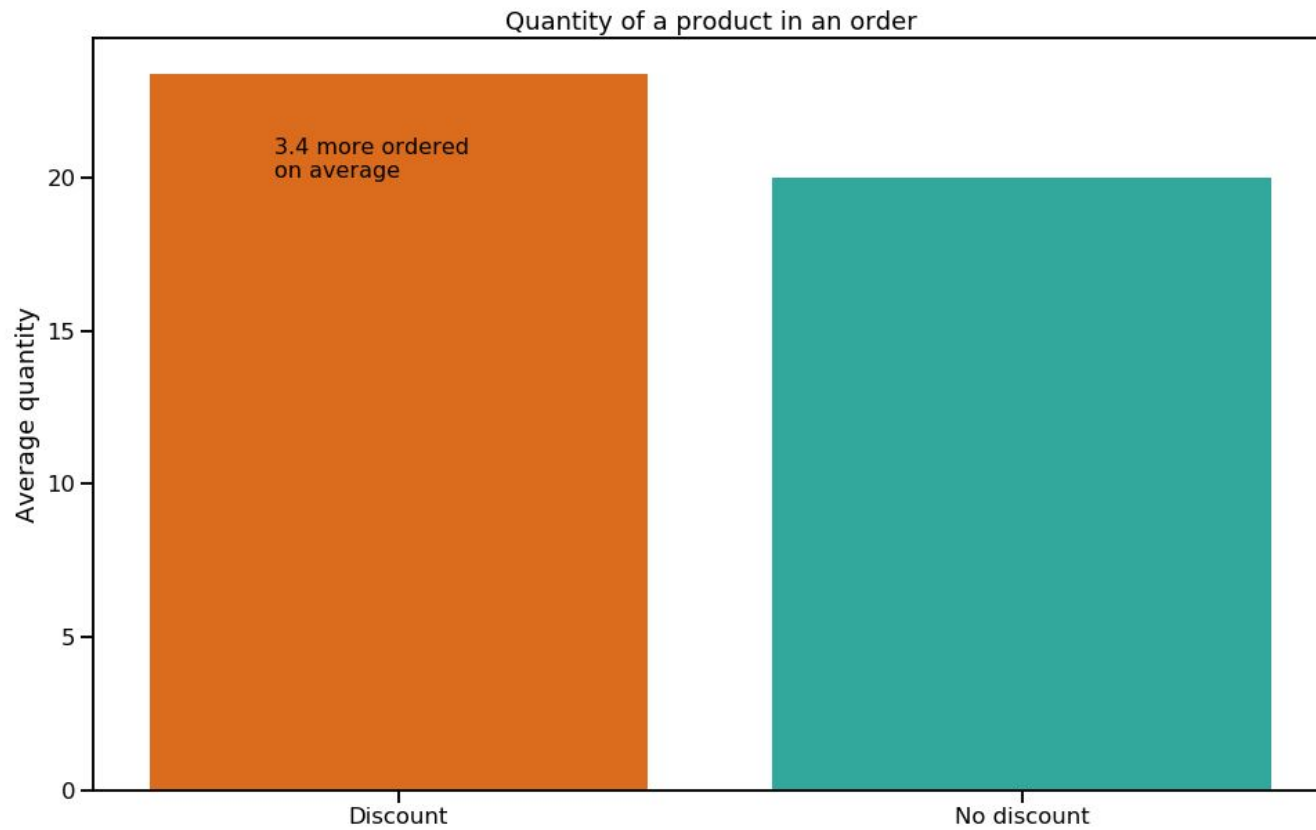
Hypothesis testing

"X and Y *look* different...but is that difference statistically significant?"
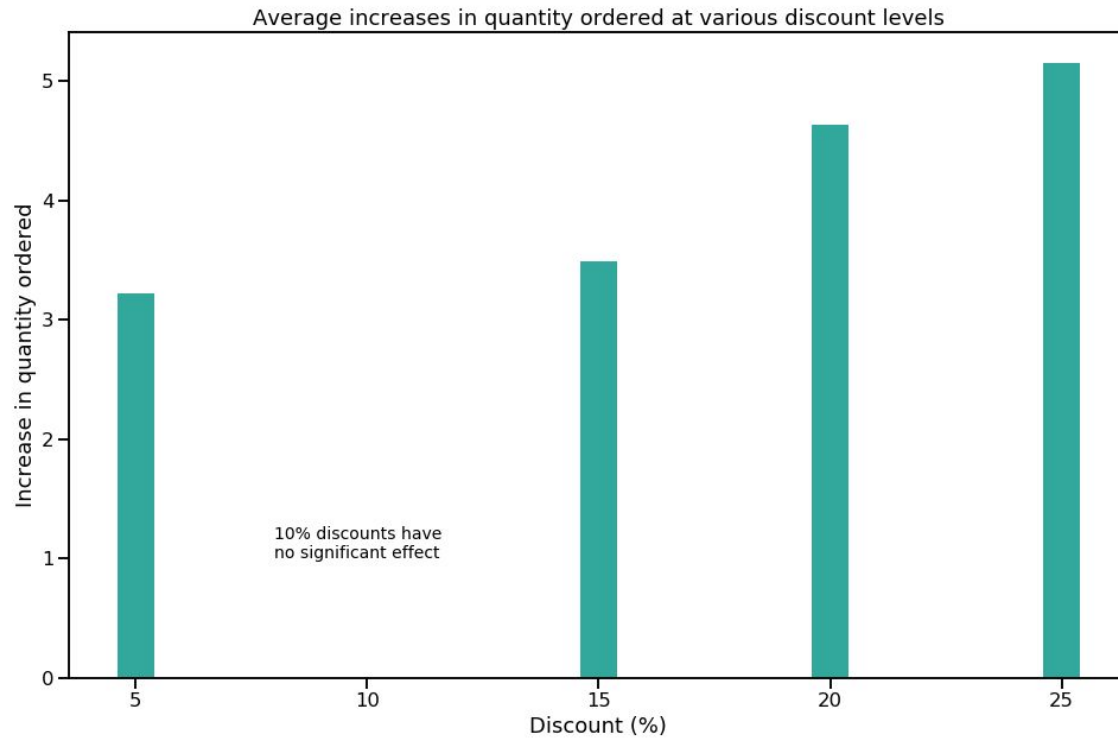
Do customers buy more when an item is discounted?

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Yes, but...

Quantity of a product in an order

3.4 more ordered
on average

P-value: 1.7e-7 (alpha: 0.05); effect size: 0.24; power: 0.9996

Average increases in quantity ordered at various discount levels

10% discounts have
no significant effect

Do customers spend more when offered a discount?

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Yes!

Average dollar amount of orders

$286.68 more spent on average
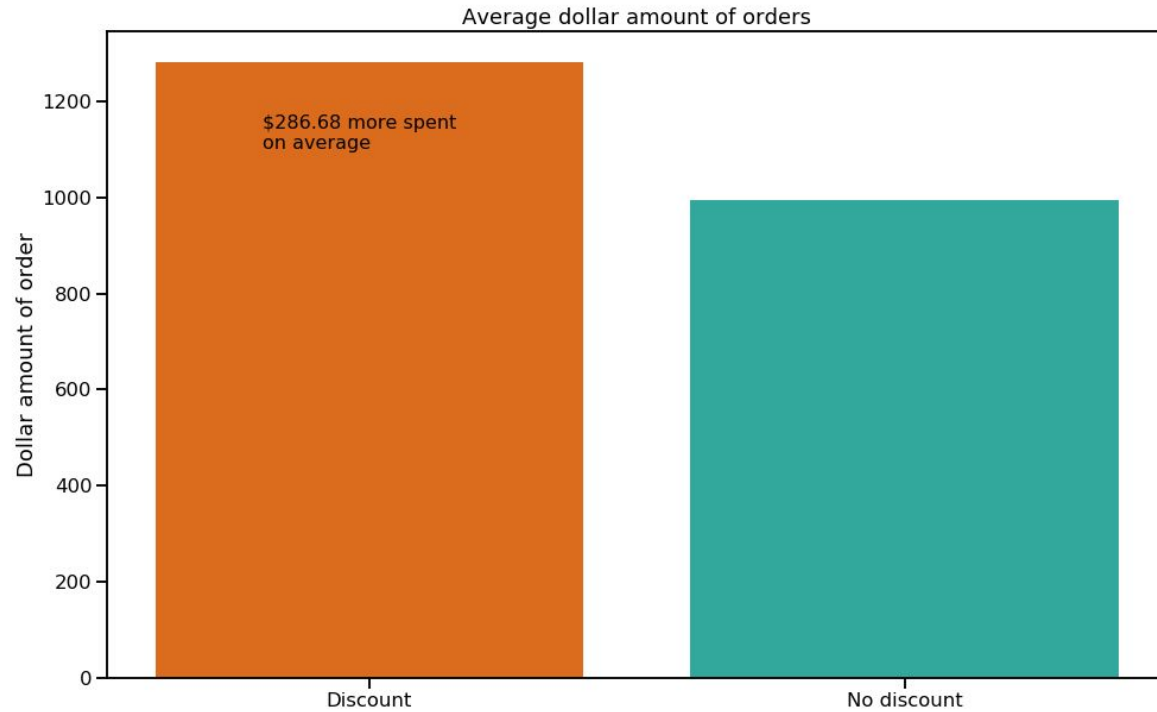
P-value: 3.5e-06 (alpha: 0.05); effect size: 0.33; power: 0.995

Is discounting worthwhile in our top category (Beverages)?

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Probably not...

Test results
P-value: 0.24
(alpha: 0.05)

Power: 0.11

What they mean
Discounts have no effect on how much customers spend on a beverage product.

We probably wouldn't be able to tell if they did!

Recommendations

1. Eliminate the 10% discount (and maybe all discounts under 20%).
2. Identify and discount the most popular individual items.
3. Collect more data on beverage purchases.

For the future

Incorporate data on product costs/profit margins

Thank you!

Contact

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Project repo: https://github.com/jrkreiger/fs-project-2