



Evaluating the discount strategy at Northwind Traders

Jenny R. Kreiger, PhD
October 11, 2019



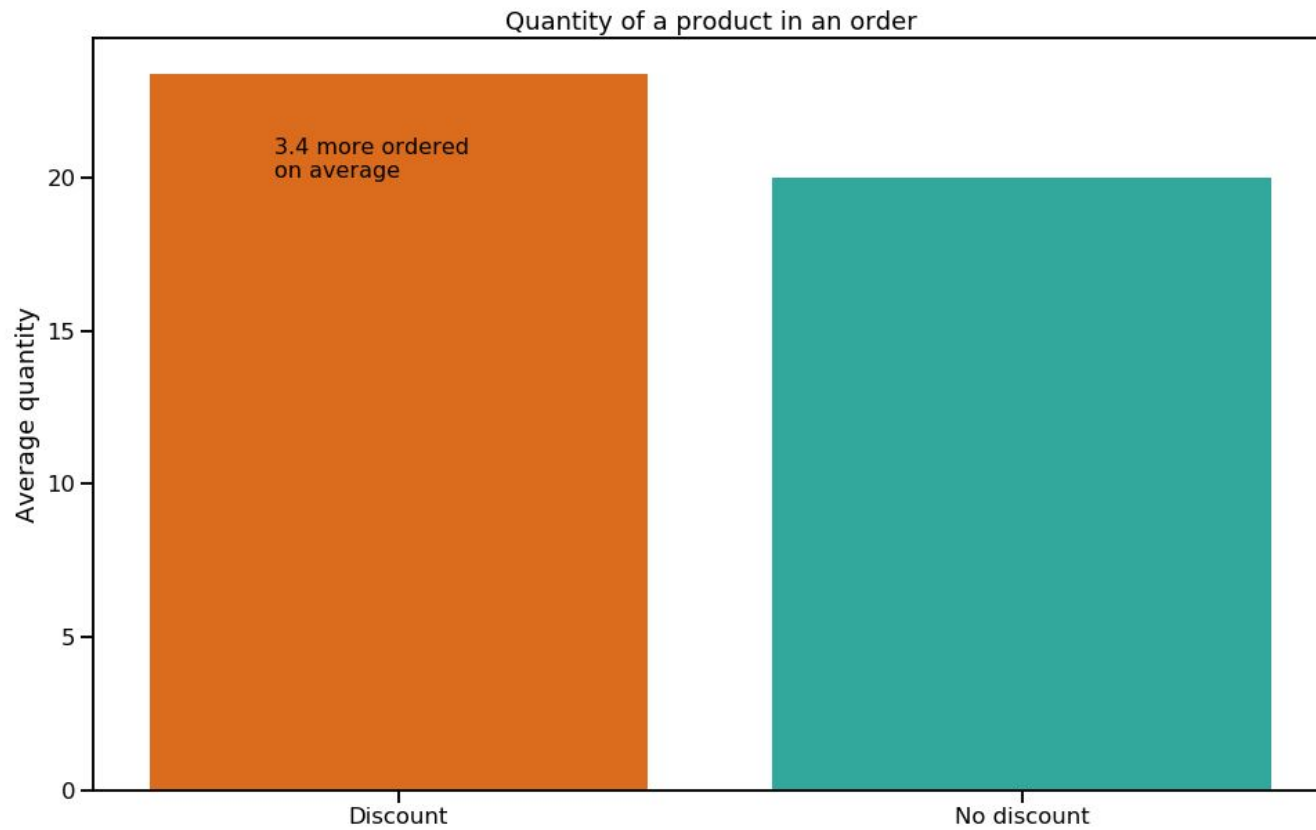
Hypothesis testing

“X and Y *look* different...but is that difference statistically significant?”

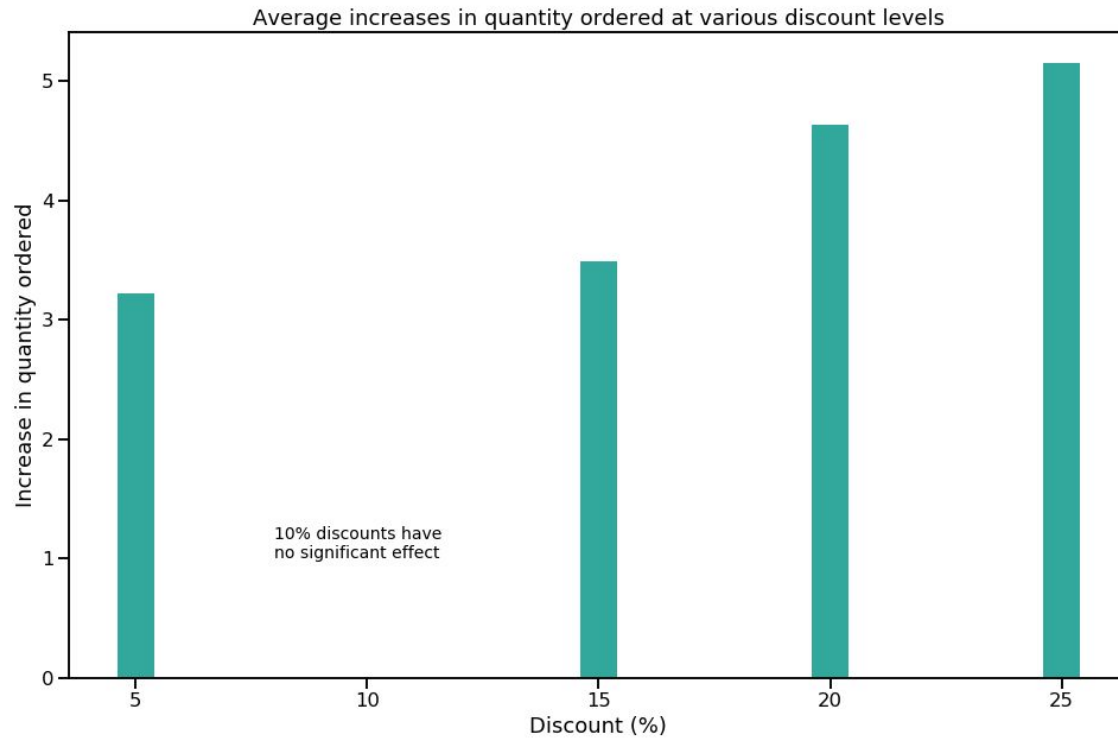
Do customers buy more when an item is discounted?

Do customers buy more when an item is discounted?

Yes, but...



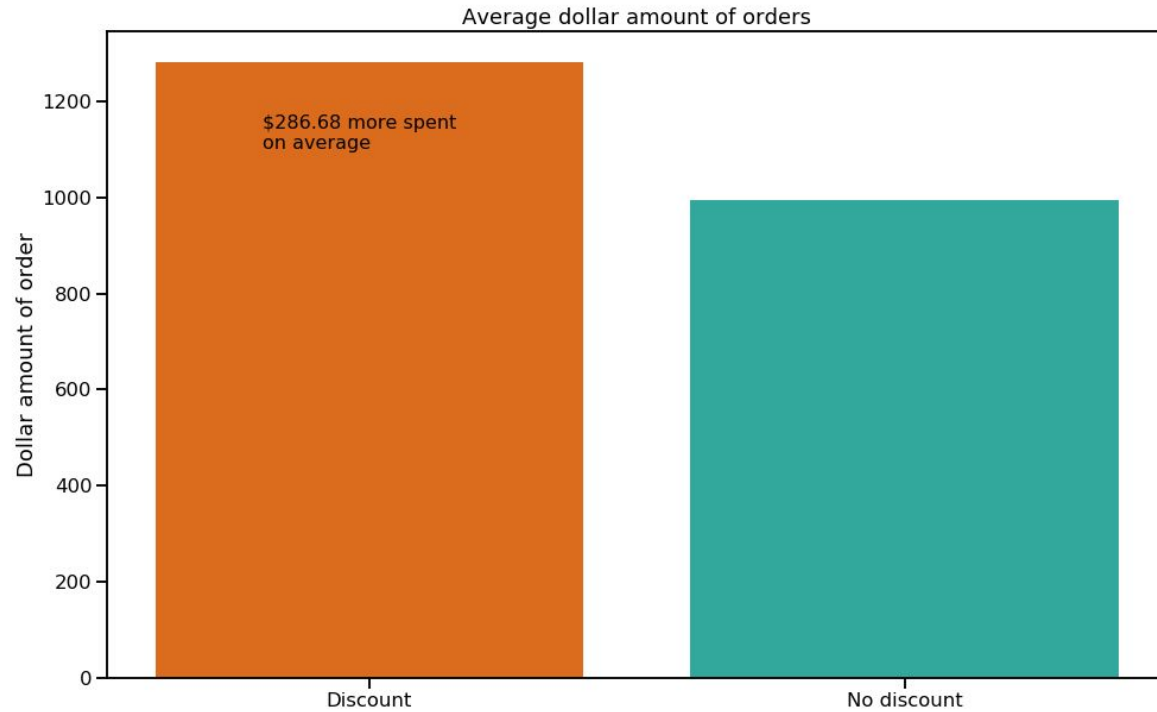
P-value: $1.7e-7$ (alpha: 0.05); effect size: 0.24; power: 0.9996



**Do customers spend more when
offered a discount?**

Do customers spend more when
offered a discount?

Yes!



P-value: 3.5e-06 (alpha: 0.05); effect size: 0.33; power: 0.995

**Is discounting worthwhile in our
top category (Beverages)?**

Is discounting worthwhile in our
top category (Beverages)?

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!

GitHub: github.com/jrkreiger/evaluating-discount-strategy

Twitter: [@j_re](https://twitter.com/j_re)

LinkedIn: linkedin.com/jrkreiger