Maximizing ACME Store Profits in Iowa

A presentation to ACME by Dunder Mifflin Consulting, LLC

Austin Lasseter - February 9, 2018

What's our goal?

ACME asked Dunder Mifflin Consulting to determine:

- What is the optimal strategy in terms of bottles ordered and price per bottle?
- Which counties in Iowa are the optimal locations to open new stores?

Where are the data from?

Dataset 1: Liquor Sales

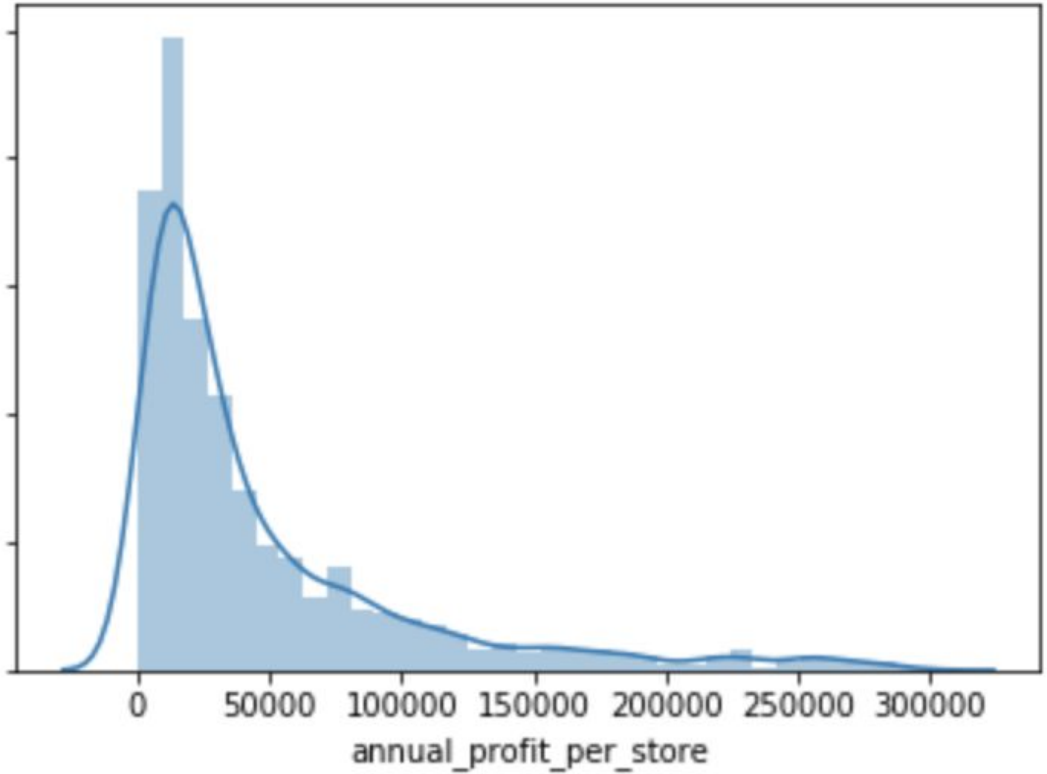
- Source: Iowa ABD
- Number of stores: About 1,400
- Year: All sales in 2015
- Caveat: All sales from state to store

Dataset 2: County Characteristics

- Source: US Department of Agriculture
- Contains: **Population, Rural/Metro status**, Unemployment, Median Income

How do we define a store's annual profit?

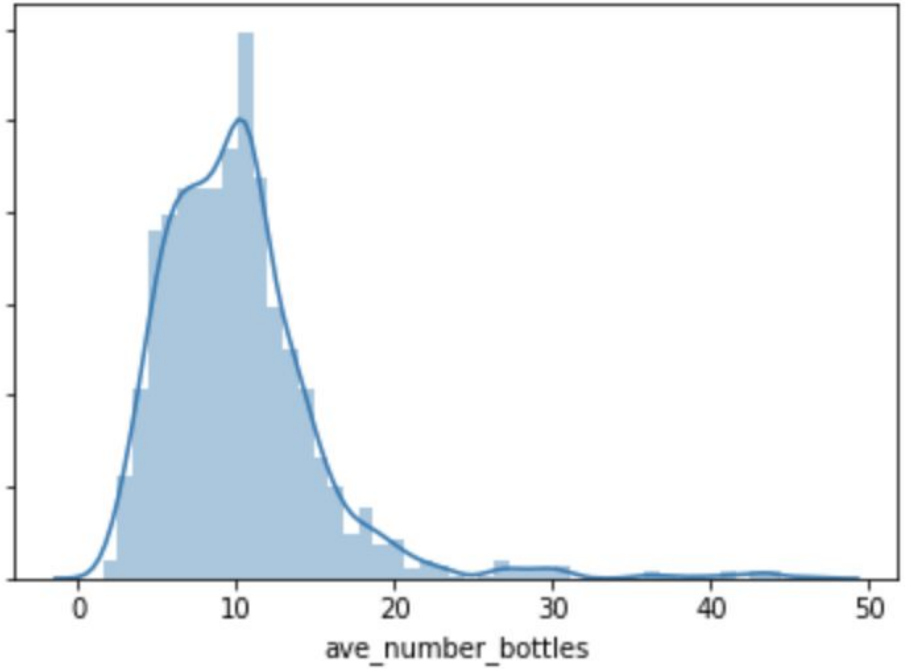
- Annual Store Profit:
  - (Retail-Wholesale) x Bottles
  - Mark up by 18%
  - Annual Sum for each store
- Average profit = $48,249
- Analysis excludes 84 stores:
  - Annual profit > $300,000 (74)
  - Average order > 50 bottles (8)
  - Average price > $30 / bottle (2)

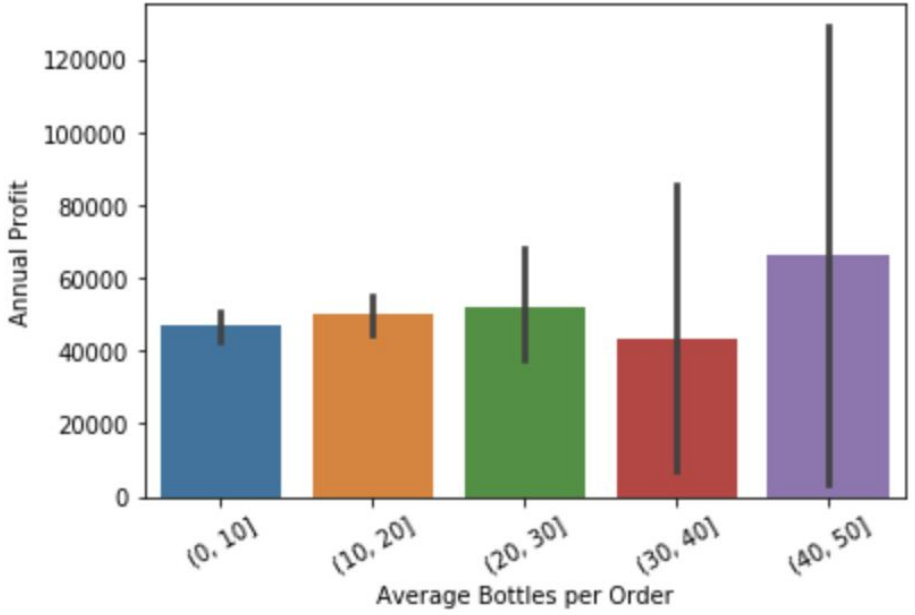


What is the optimal number of bottles?

Average order to Iowa ABD: 10.1 bottles per order

Stores that place larger orders tend to have higher annual revenue, up to a point

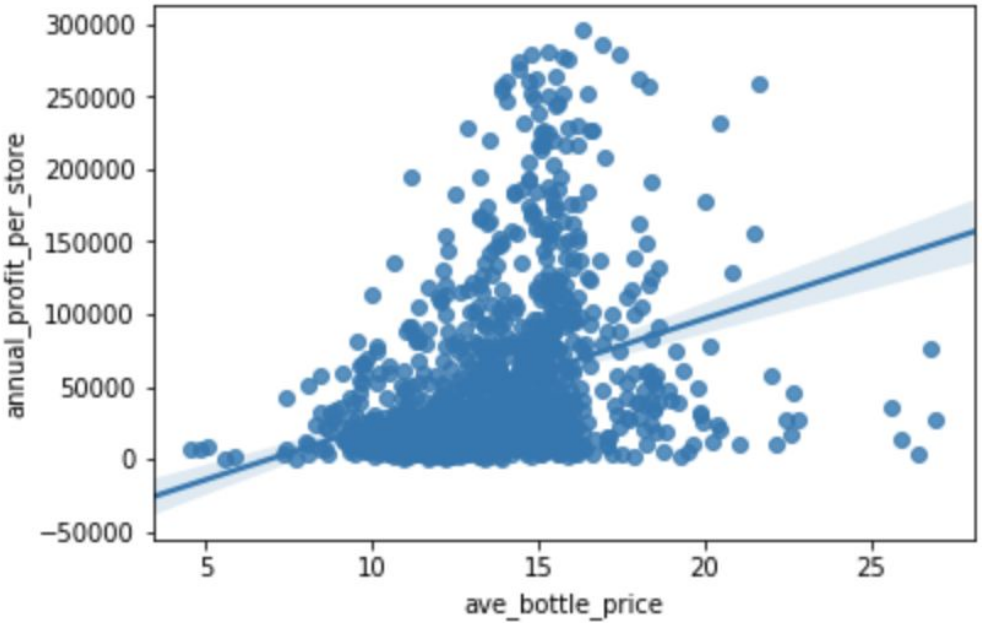


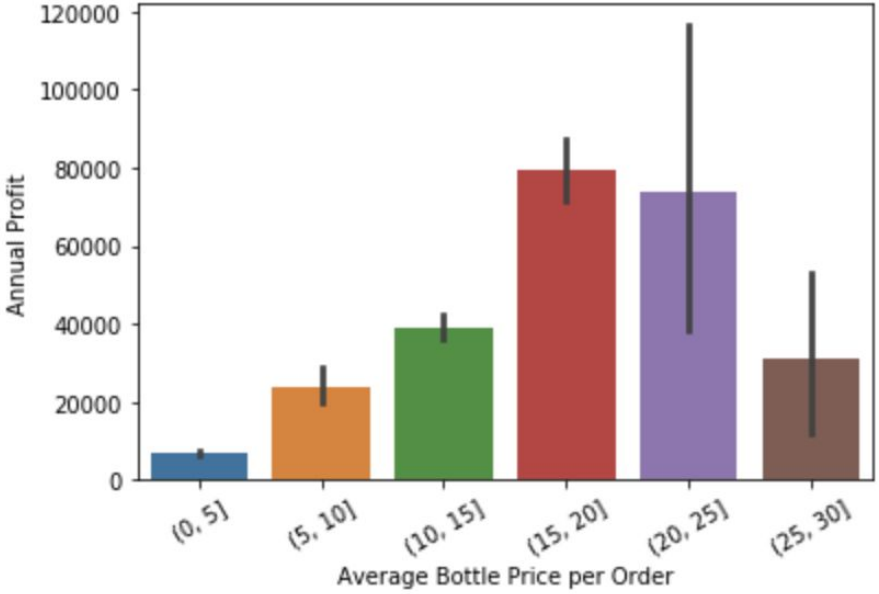


What is the optimal price per bottle?

To maximize annual profit, stores should focus on bottles priced $15-$20 (wholesale)

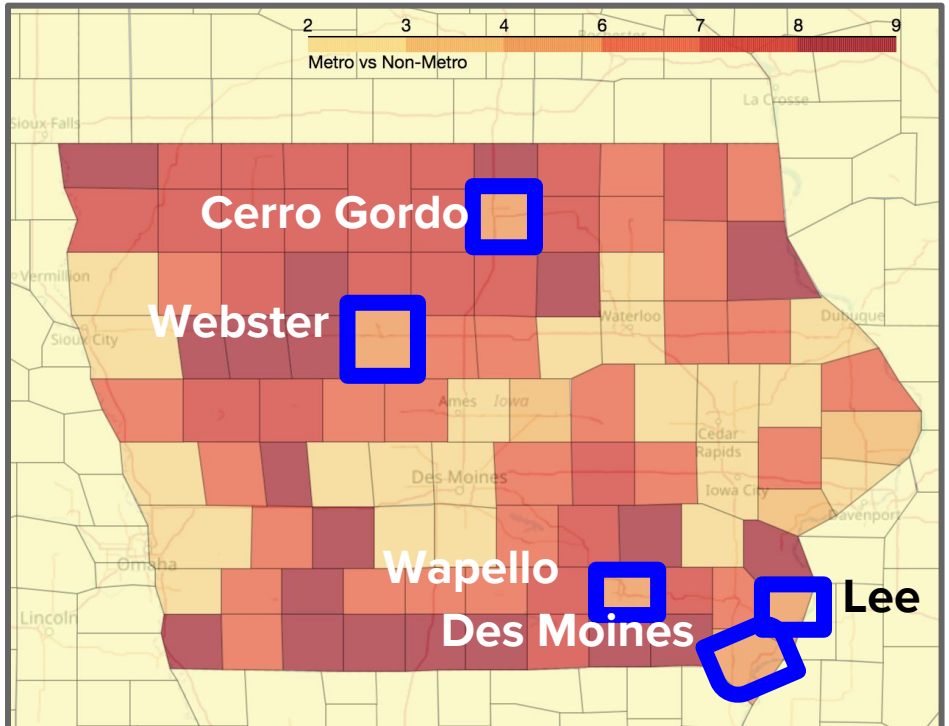
This is target is above the average order of $13.6 per bottle (wholesale)

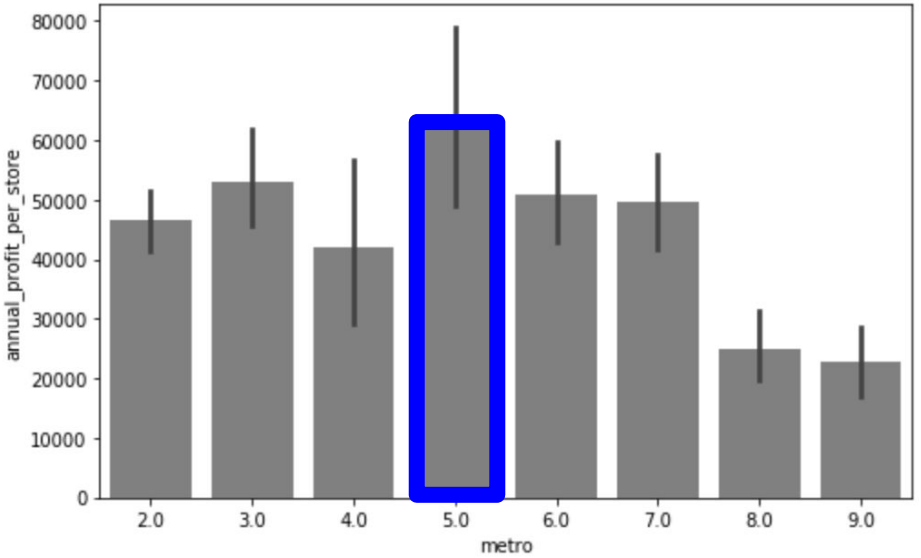




Do metro counties have higher profits?

Stores in non-metro, non-rural counties have higher annual profits

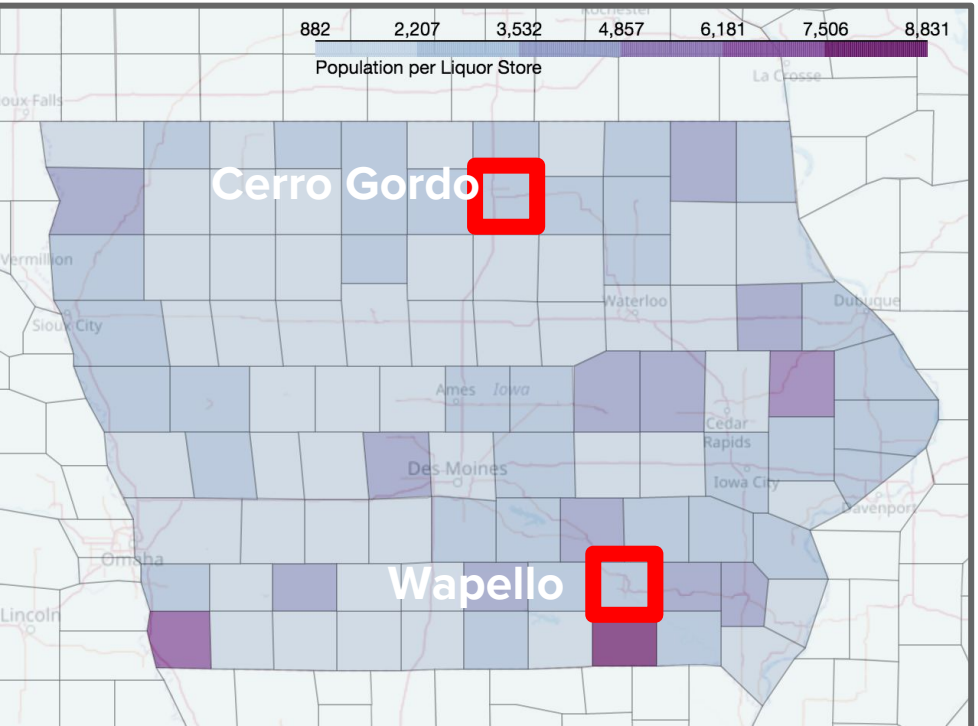


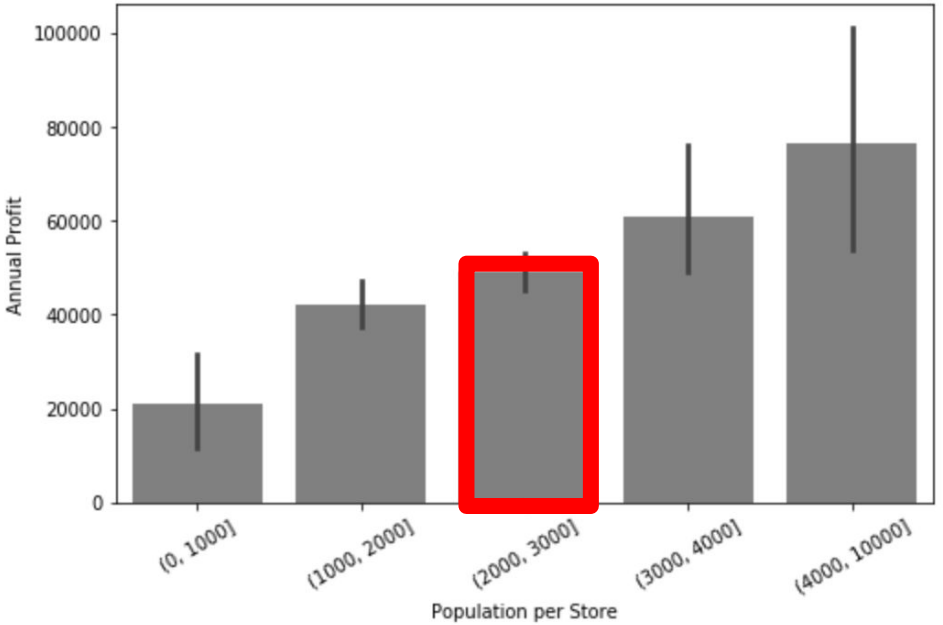


“Non-metro”: Urban population of 20,000 or more, not adjacent to a metro area

Does county saturation impact profit?

Stores in under-saturated counties have higher profits





Recommendations

- Stores should order bottles in above-average quantities of **10-20.**
- Stores should order bottles in the price range of **$15-$20** per bottle.
- Ideal counties are **non-metro** and **undersaturated**.
- A new store in **Wapello county** is predicted to have an annual profit that is **$30,430** higher than similar stores in other counties.
- A new store in **Cerro Gordo** is predicted to have an annual profit that is **$43,940** higher than similar stores in other counties.

How much can our prediction explain?

Our model explained about 15% of the variability in stores' annual profit

- zero percent
- 100 percent
- 15 percent