Northwind:
Strategic Discounting & Price Elasticity of Demand

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Primer

PRICE ELASTICITY OF DEMAND:
- Economic measurement to show the responsiveness, or elasticity, of the quantity demanded to a change in its price, when nothing but the price changes
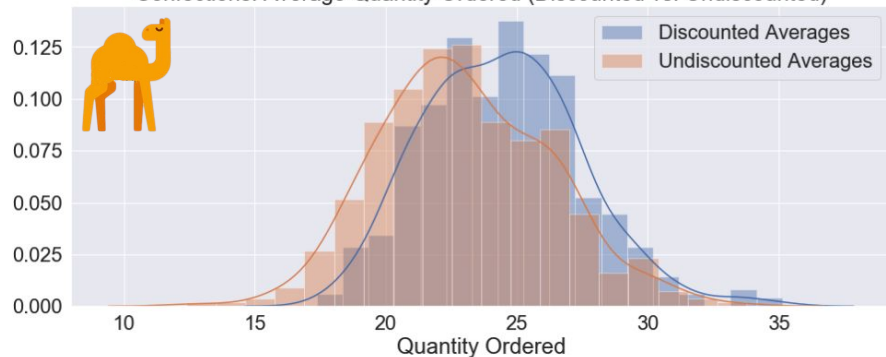
KEY QUESTIONS:
- Do you have any **products/categories** that have a greater price elasticity of demand?
- Do you have any **customers/regions** that have a greater price elasticity of demand?
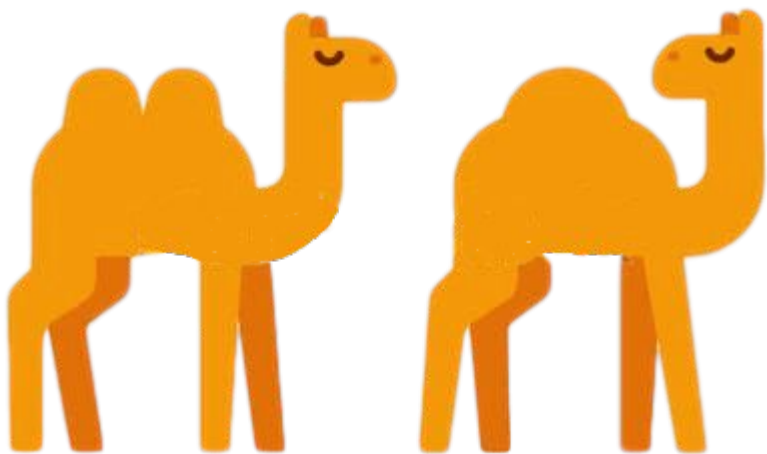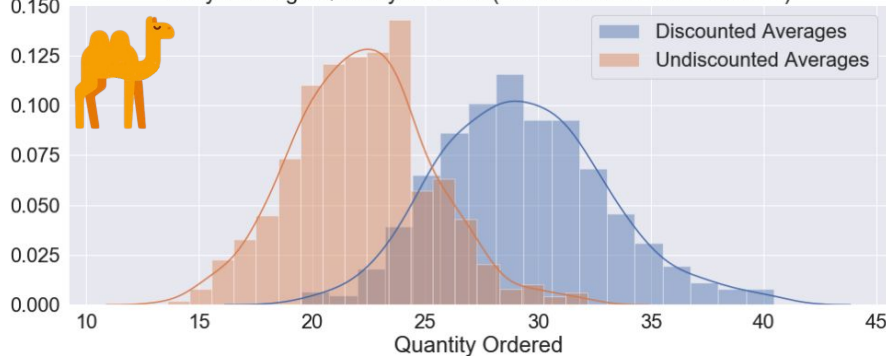
CAN YOU TELL THE DIFFERENCE?
Hint: Look At Their Humps

Confections: Average Quantity Ordered (Discounted vs. Undiscounted)

Dairy: Average Quantity Ordered (Discounted vs. Undiscounted)
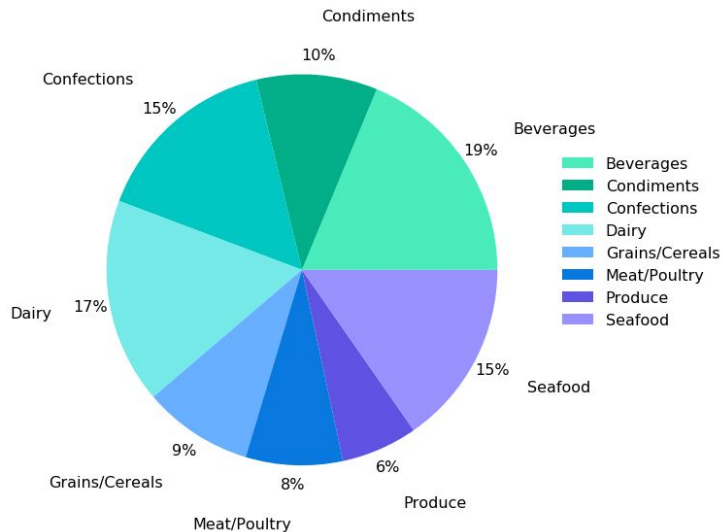
HOW ABOUT HERE?

- **DAIRY** looks more like a two-hump camel
- **CONFECTIONS** looks more like a one-hump camel

SO WHAT DOES THIS MEAN?

- Dairy price elasticity of demand > Confections price elasticity of demand
- **DAIRY:**
  - Clear change in quantity ordered
- **CONFECTIONS:**
  - Indiscernible change in quantity ordered (in comparison)

DISCOUNT STRATEGY:

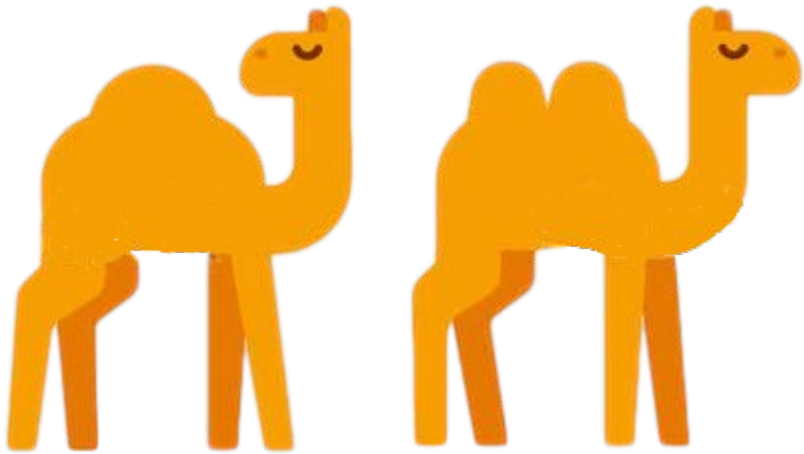- Focus discounts in categories that see meaningful change in demand

Average Order Quantity By Category

BIG GAINERS:

Beverages, Condiments, Dairy, Meat/Poultry

SMALL GAINERS:

Confections, Grains/Cereals

LET'S TRY THIS AGAIN

CUSTOMER REGION

Distributions of % QD Change After Discounts
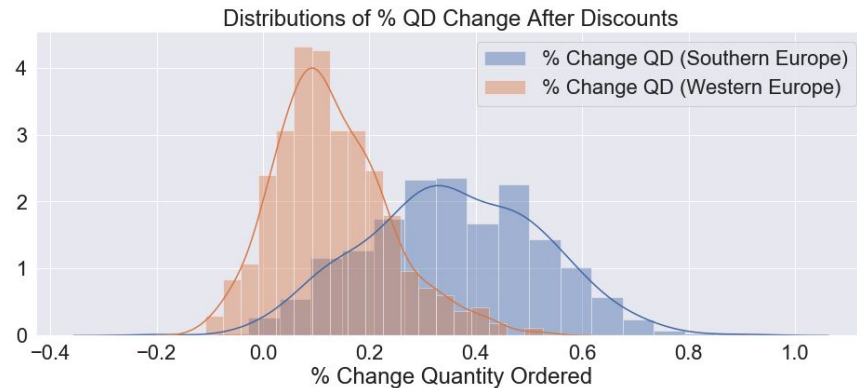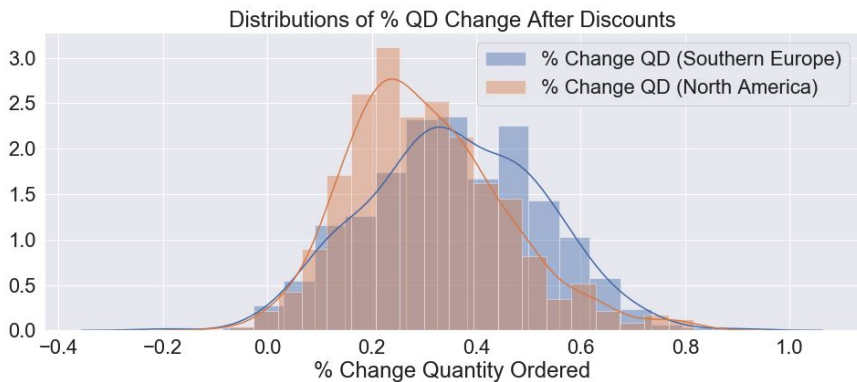
HOW ABOUT HERE?

- Southern Europe & North America saw similar % increases in quantity demanded, relative to their original order sizes
- Southern Europe > Western Europe

SO WHAT DOES THIS MEAN?

- Not all your customers respond to pricing discounts in the same way
- Some regions are very responsive to price cuts (Southern Europe, North America, British Isles)

DISCOUNT STRATEGY:

- Focus discounts in regions that see significant change in demand
- Consider pairing with categorical discounts

Average Order Quantity By Region
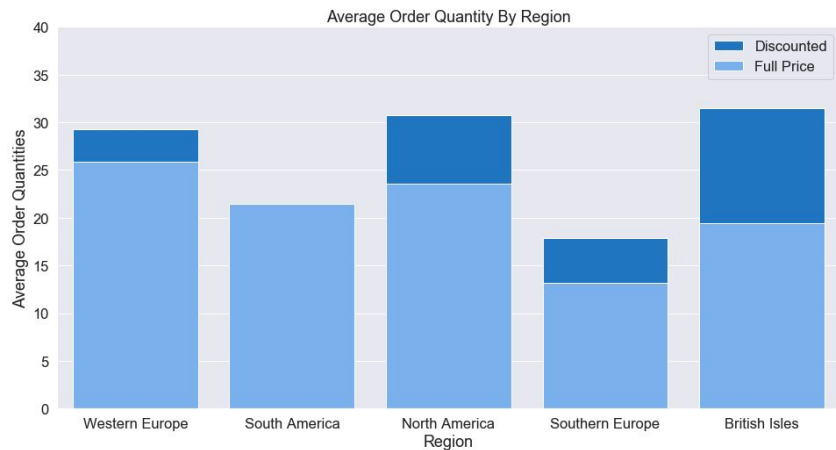
BIG GAINERS:

British Isles, North America, Southern Europe

SMALL GAINERS:

South America (small customer)

KEY TAKEAWAYS

1. Focus discounts on product types that have higher price elasticity of demand

    a. Grains & Confections had the lowest price elasticity of demand

2. Focus discounts on regions that have higher price elasticity of demand

3. All categories & regions* saw statistically meaningful increases in quantity demand

NEXT STEPS

Include Price

Repeat tests on quantity demanded, but incorporate product prices

Compare Regions/Categories

Repeat individual category tests by region - likely that regions respond differently depending on product type

Explore Seasonality

Determine seasonality of product types, and when to discount

Fix Your Data
No actual foreign key constraints, employees hired in future

THANKS!

Any Questions?