

Hypothesis Testing

With Northwind Database

Experiment Scope

- ▶ Find if there is any statistically significant of discount on quantity of a product in an order and if there is at what level ?
- ▶ Is there a statistically significant difference in performance of shipping companies?
- ▶ Is there a statistically significant difference in discount between categories?
- ▶ Average earning from the different regions.

Methodology

- ▶ Hypothesis Test
 - ▶ Includes Null Hypothesis and Alternative Hypothesis
- ▶ T-test
- ▶ ANOVA Test
- ▶ Cohen's d

Impact of Discount on Order

- ▶ Order quantity increases on average by 25% if the discount is given in range of 5 to 25%.
- ▶ Discount Amount is approximately the same across all product categories

Shipping Companies Performance

- ▶ All shipping companies deliver order in approximately 20 days.
- ▶ “Federal Shipping” has the fastest order processing

Average Earning from different region

- ▶ The data Exploration reveled few things
 - ▶ Western Europe is the region with the greatest number of orders, and also has the greatest total revenue.
 - ▶ However, North America has the most expensive order on average.
 - ▶ Southern and Eastern Europe has the lowest number of orders, lowest total revenue, and cheapest order on average.
- ▶ **Conclusions**
 - ▶ A potential action would be to stop serving customers in Southern and Eastern Europe, and to focus more on customers in Western Europe and North America.

The background features abstract, overlapping green geometric shapes, primarily triangles and polygons, in various shades of green, creating a modern and dynamic visual effect. The shapes are layered, with some appearing more prominent than others, and they extend from the edges of the frame towards the center.

Thanks