NORTHWIND TRADERS

BUSINESS
EXPLORATION

Northwind Traders is a leader in importing and exporting specialty foods from around the world.

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PROJECT OVERVIEW

OVERVIEW

Exploration of the Northwind Traders business, a specialty importer/exporter of specialty foods

DATA COLLECTION

Project uses internal database containing information from recent customer orders, employees, and vendors

TESTING

Four hypothesis tests were created and ran to get a better sense of customer habits and what has an influence on customer orders

NEXT STEPS

Using the results from our tests, we will gain valuable insights than can be transformed into a business plan for the future

NORTHWIND TRADERS PROJECT

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QUESTION ONE:

Do discounts have a statistically significant effect on the number of products customers order? If so, at what level(s) of discount?

QUANTITY & DISCOUNT

RELATIONSHIP

Using a Chi-Squared Independence test, we were able to show there was a statistically significant relationship between quantity and discount of an order.

DISCOUNT EFFECT

Using a Welchs T-Test we determined there is a difference between the mean quantity of orders with a discount and mean quantity of orders without a discount.

DISCOUNT LEVEL

Using a Tukeys range test we were able to conclude that discount levels of 5%, 15%, 20%, and 25% showed a statistically significant difference in quantity means when compared to orders with no discount

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QUESTION TWO:

Does the category of products purchased have a statistically significant effect on the quantity of the order?

RELATIONSHIPS

Our research shows there is a statistically significant relationship between quantity and category when comparing the following categories:

- ❖ Beverages vs. Condiments
- ❖ Confections vs. Grains/Cereals
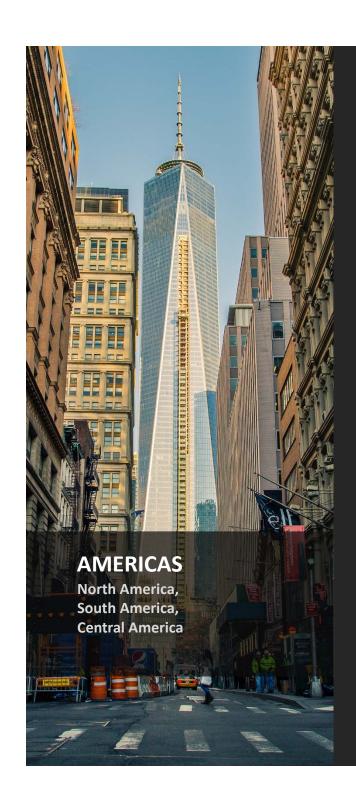- ❖ Dairy Products vs. Grains/Cereals
- ❖ Confections vs. Dairy Products

INFERENCES

Although there is a relationship between these categories, there is no difference in means of the quantity of products ordered from different categories.

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QUESTION THREE:

Does the region a customer is from have a statistically significant effect on the total amount of their order?

ORDER TOTAL & REGION

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Using the Welchs T-Test, it was determined there is no statistically significant difference between the mean order total for orders placed in the Americas vs. orders placed in Europe.

AMERICAS

North America, South America, Central America

EUROPE

Western Europe, Northern Europe, Scandinavia, Southern Europe, British Isles, Eastern Europe

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QUESTION FOUR:

Does the country a customer is from have a statistically significant effect on the total amount of their order?

Through the use of Welch's t-test, after removing countries with small sample sizes, we were able to determine that there are 16 country pairs that have statistically significant differences in order total means.

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HIGH ORDER TOTALS

Countries such as Austria, USA, Germany have customers who have higher order totals on average when compared to most other countries.
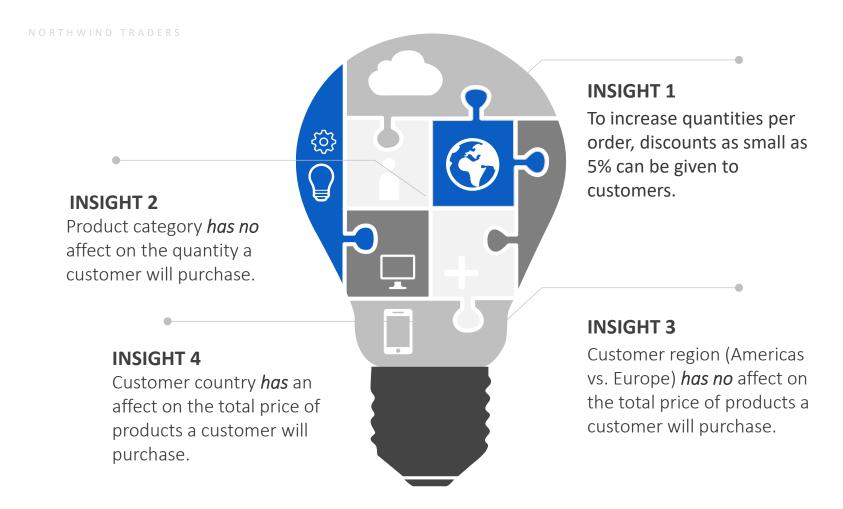
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LOW ORDER TOTALS

Countries such as France, Brazil, and Venezuela have customers who have lower order totals on average when compared to most other countries.

ORDER TOTAL & COUNTRY

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BUSINESS DECISIONS

BUSINESS DECISIONS

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INSIGHT 1

To increase quantities per order, discounts as small as 5% can be given to customers.

INSIGHT 2

Product category *has no* affect on the quantity a customer will purchase.

INSIGHT 4

Customer country *has* an affect on the total price of products a customer will purchase.

INSIGHT 3

Customer region (Americas vs. Europe) *has no* affect on the total price of products a customer will purchase.

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NEXT STEPS

THE PATH FORWARD

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WHERE DO WE GO FROM HERE?

1. What is the relationship we found between the categories in question two? Are customers more likely to buy these products together, or separately?

2. Does the effect of percentage of discount on quantity or order total differ by country?

3. Are customers from different countries more likely to purchase products from certain categories than others?