

NorthWind Traders Analysis

BY

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Objective

To analyse and provide valuable insights into order trends, customers' behaviour, product performance, shipper reliability, and future sales trends.

Overview

The Northwind database consists of about 13 tables with data revolving round the sales transactions of different products for a trading company. It includes data on customers, products, orders, suppliers, employees and others.

Key Relationships:

Customers & Orders: Each order consists of one or multiple products placed by customer(s).

Orders & Order Details: Each order has corresponding order details that include the specifics of the products ordered with records like quantities, discounts, and prices.

Orders and Shippers: Orders are shipped to customers through various shipping companies.

Products & Suppliers: Products are sourced from various suppliers.

Methodology

These are the steps involved in the data analysis process:

- The raw data from the Northwind database was imported into Power BI after installing ODBC because it is an sqlite database.
- The data was cleaned and transformed, focusing on key tables like Orders, Order Details, Products, Customers and Shippers.
- Calculated measures and columns such as Net Revenue, Total Profit, Total Cost were created.
- The relationships between the tables were established to enable a seamless and efficient data analysis. After which interactive dashboards were created to visualise the data, providing insights into the use cases.



NorthWind
Traders

Order Overview

Product
Performance

Customers

Order Overview

Products

All

Category

All

Country

All

Month

All

Year

All

\$448.39M

Net Revenue

\$383.64M

Profit

16.28K

Orders

15.54M

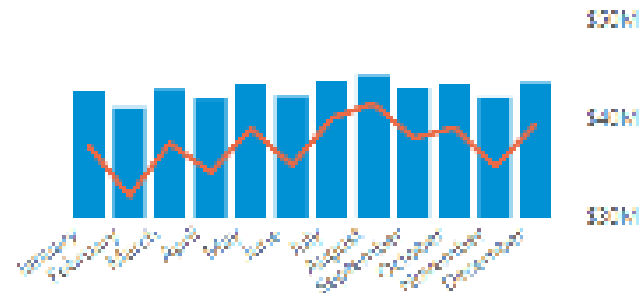
Quantity

7.82

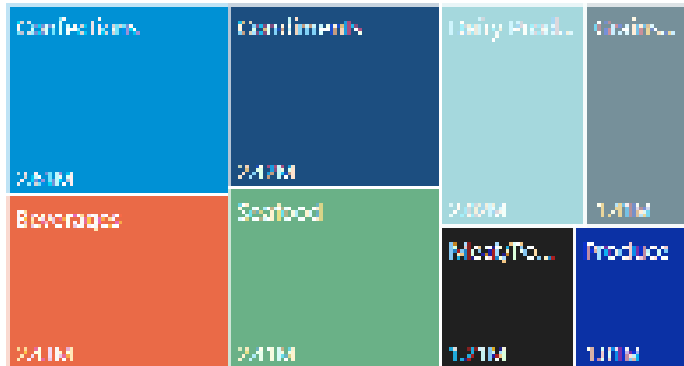
Average Shipping Days

Total Quantity and Revenue Over Time

Quantity Revenue



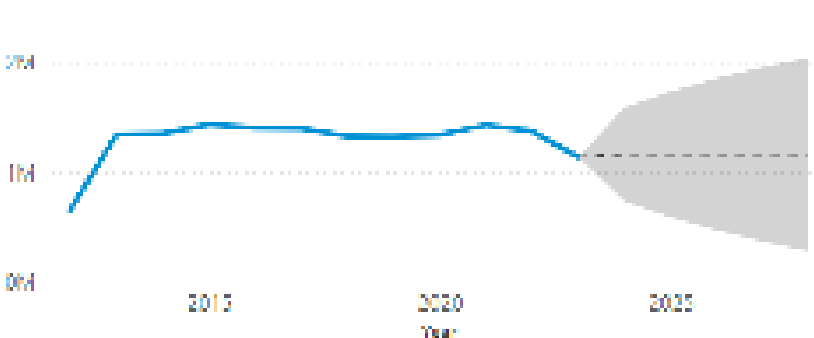
Total Orders by Category



Average Shipping Days by Shipper

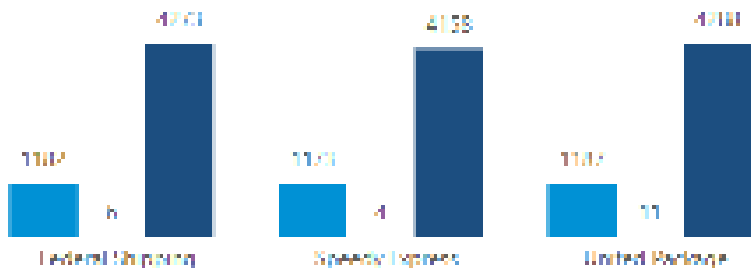


Sales Forecast



Order Fulfillment by Shipper

Delayed Not Shipped On Time



Key Insights | Order Overview

16,282 orders were made with about 15.54 million quantities of several products sold. A peak of accumulated orders is observed moving from the month of July to August and December which might be as a result of external events such as holidays.

The Average shipping days across the 3 shipping companies is 7.82 days. The three(3) shipping companies are in close margin pertaining to their order fulfillment rate(on time delivery, delayed delivery), with about 20 orders not delivered.

Using time series analysis, future sales were forecasted, highlighting potential growth opportunities in the [Beverage and Confections] categories over the next



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Customers

Product Performance

\$448.39M

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Profit

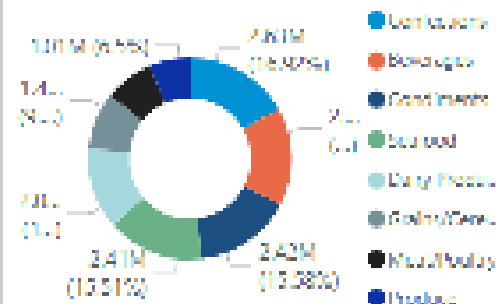
77

Products

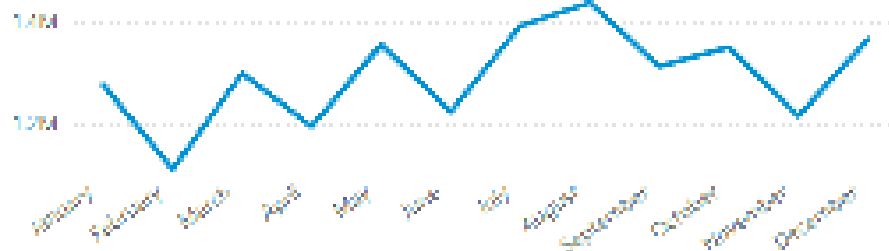
Top 10 Products by Quantity

Loubi...	205.2K
Artich...	205.0K
Toutin...	205.0K
Snap...	205.0K
Gumb...	204.9K
Carina...	204.4K
Pavlo...	204.0K
Banet...	204.0K
Unk...	204.0K
Seng...	203.7K

Quantity Sold by Category



Sales Over Time



Category Country Month Year

All All All All

Product Name	Total Quantity	Net Revenue	Total Profit
Côte de Blaye	207214	\$51265,095.74	\$40025,171.55
Flourange Pastabawani	194010	\$24621,464.01	\$24,100,460.77
Mishi Kobe Niku	200950	\$18421,001.50	\$10351,064.18
Stashney's Marmalade	205617	\$16651,001.05	\$16040,501.05
Margirup Dried Apples	200019	\$10661,001.55	\$10451,100.51
Islewa sauce	200010	\$9551,001.00	\$9,400,450.97
Trade Soukbaout	207910	\$9251,001.00	\$1000,401.00
Iyah Coffee	207950	\$8001,001.00	\$1,000,401.00
Schoggi Schokolade	200118	\$1029,001.00	\$1,000,401.00
Vegie Speed	200754	\$1000,001.00	\$1000,001.00
Alie Mutton	200004	\$7000,001.00	\$7,000,001.00
Northwoods Strawberry Sauce	200094	\$1000,001.00	\$7,000,001.00
Groschi di donna Alie	200016	\$7000,001.00	\$7,000,001.00
Queso Manchego La Pastora	207242	\$7000,001.00	\$6,000,001.00
Mozzarella di Giovanni	200911	\$7000,001.00	\$6,000,001.00
Cremissimo Ricord	200054	\$6000,001.00	\$6,000,001.00
Petit Pasties	200016	\$6000,001.00	\$6,000,001.00
Winnersgate Gemmelknudel	200245	\$6000,001.00	\$6,000,001.00
Gumber Gumberbees	200761	\$6000,001.00	\$6,000,001.00
Mexicanque Exotik	194411	\$6000,001.00	\$6,000,001.00
Ibex	200010	\$6000,001.00	\$6,000,001.00
Trade Rob's Organic Dried Pears	200940	\$6000,001.00	\$6,000,001.00
Siroc d'erable	205003	\$5830,001.00	\$5,590,001.00
Groschi di	201750	\$5244,001.00	\$4,807,001.00
Nord-Ost Matzothering	203114	\$5261,001.00	\$4,734,001.00
Pötö chnole	203480	\$4870,001.00	\$4,673,001.00
Total	15538602	\$448,386,633.17	\$383,630,538.06

Key Insights | Product Performance

77 products were sold, out of which 8 were later discontinued while 69 are still active. Louisiana Hot Spiced Okra tops the chart of products with the highest quantity sold followed by Sir Rodney's Marmalade as displayed on the bar chart. "Côte de Blaye" and "Thüringer Rostbratwurst," were the top performing products in terms of both revenue and profit.

On the basis of product categories, Confections has the highest proportion of products sold with 16.92% followed by Beverages with about 15.62%.



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Profit

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Customers

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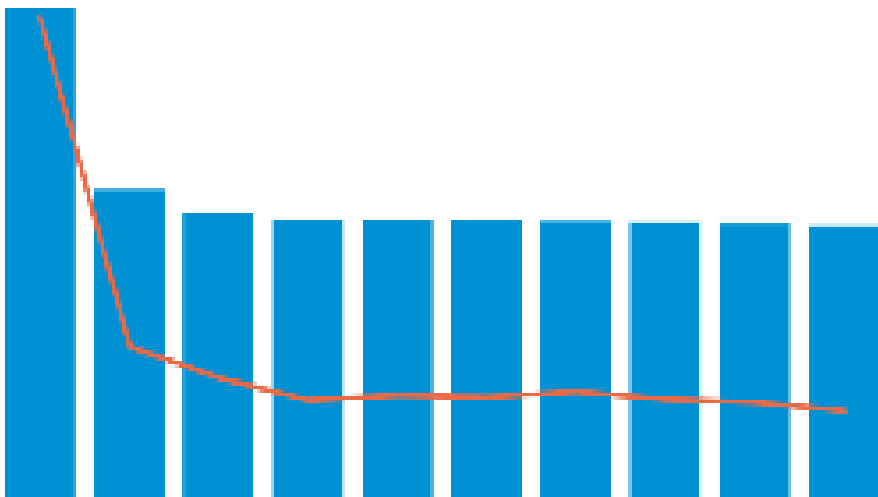
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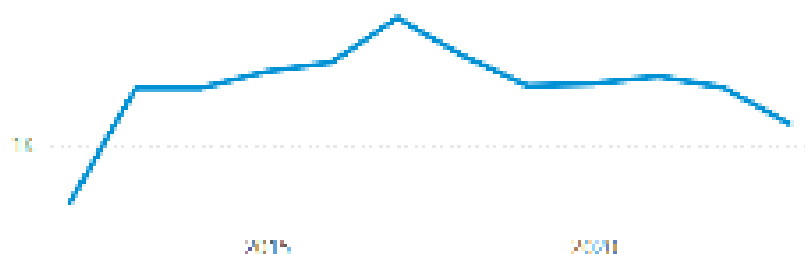
Top 10 Customers by Revenue & Quantity

Revenue Quantity

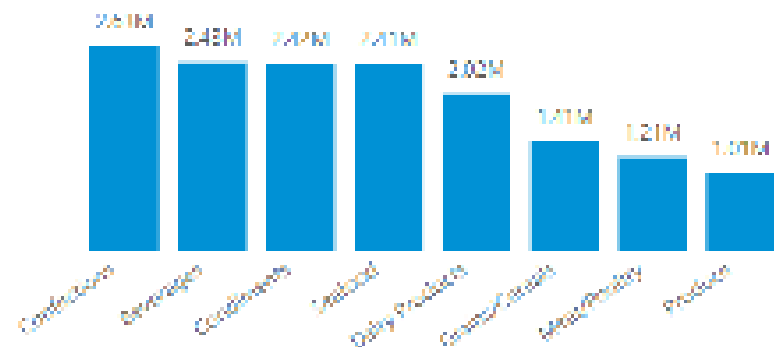


Purchase Frequency Over Time

2K



Customers' Orders by Category



Key Insights | Customers

The bar chart displays the top 10 customers that contributed the highest revenue. The Line chart further displayed the purchase frequency of Customers over time and also, their order preferences which revealed that they spent more on products in Confections, Beverages, Condiments and Sea food categories.

Recommendations

Personalized marketing strategies should be put in place to retain the top customers while understanding their order patterns and preferences. This will help in maximizing revenue.

Increased promotion and inventory of high-performing products during peak seasons should be considered.

The prices of high-demand products with lower profit margins should be re-evaluated in a bid to enhance profitability and also, reduce discounts for products with high turn over but low profitability. Low-performing products can be discontinued.

Strict quality control measures should be in place for Shippers in order to improve delivery times and also, reduce order delays.

Thank You
