Cover page

Project Title: NorthWind Sales Analysis
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INTRO

I have chosen the Maven NorthWind Challenge. The reason I chose this is because this is something that I find interesting to demonstrate my skillset to the import and export company. This project showed enough data and was clear and concise when explaining its objective. The goal of this challenge is to analyze the sales, orders, and products performance of the North Wind Traders Company using the Northwind data set. My role is to act as a junior BI Developer tasked with building a Power BI report that helps the company's management team identify trends, monitor performance, and KPI's, and make informed decisions to improve sales and operational efficiency within the company. The organization sells a variety of products across multiple categories, and understanding which products, customers, and regions drop the most revenue is essential for business growth.

Dataset Info

Based on my research of a classic set of sample data, this company imports and exports a huge variety of specialty food products all over the Globe. As a sample database company this project gives me the feel of actually working towards a future company dataset. I was very impressed by this dataset and its character to make up of multiple interconnected tables that were orchestrated to simulate real time legit business operations.

When it comes to dataset's this dataset contains multiple tables, that includes

- Orders – Order ID, Customer ID, Employee's ID, Ship dates, Ship Delivery Dates
- Order Details- Product IDs, Unit prices, Discounts and Quantities
- Products- Product Names, Categories ID, Product ID, Quantity per, Unit price
- Employees- ID, Names, Title, City, Country, reports to
- Customers- Columns 1-6 noticed this difference, but will update it to Customer ID, Company Name, Contact Name, Contact Title, City and Country

What I listed in Bullet Points are information for the dataset which will allow you to analyze the sales data by time, products, categories, and customers.

ETL

When it comes to shaping and connecting data this section is very important step. Throughout this process when it comes to connecting data, I noticed within the customer table the headers were not promoted, secondly I also noticed that within row 1 instead of having column names and headers it was just labeled as “column”. Within this process I also managed to merge queries (order details and products) to create product ID so that way I could merge the 2 columns together and create some sort of relational aspect between the 2 tables. When it comes to creating DAX I created products ID and products name and the order details table.

DATA Model

When it comes the data model I created a star schema, doesn’t look exactly like the star schema from the mavens analytics course but the user will definitely understand. When I first viewed the star schema I thought I was impossible to make with the example having 4 related dimension tables to my project including at 7. When it came to identifying table relationships this was something I struggled with but managed to use the auto detect to see if I was doing the correct relationships. I created 6 relationships after successfully analyzing the relationships I noticed the cardinality between all 6 are labeled as Many to one, with a Single Cross-Filter direction.

Calculated Fields (DAX)

When it comes to using Dax I managed to use DAX in few instances. Starting out reviewing my data and trying to understand it overall at first was a challenge with the numerous inconsistencies. One of the Dax measures I created was Total Sales which ended up being used for a KPI on the Sales Overview Page, this measure became useful because it was a calculation method to help identify Total Sales by Putting Unit Price and Order Quantity. The next DAX method I included was Total orders, this KPI helped out by generating the total orders processed. Using A Dax is so important when it comes to Power BI. When it comes to Dax I have little experience so it kind of was a little challenge when I identified I ran into a problem, with more practice and patience you will go far using the DAX measures. Overall within this report I generated a total of 7 DAX measures and they are very useful in many different forms. Within the customers tab I created Total Customers which will help benefit the purchase percentage by customers. For the employee's table I generated 3 DAX measures " Total employee sales, Total Orders Processed, and Average Sales Per Employee". Lastly for the Orders Detail Tab, I generated 3 DAX measures as well " Average Freight Cost, Total Orders and Total Sales" these 7 Dax measures are very important because they help the company identify challenges within those tables.

Data visualizations and reports

For this report I am going to manage to use 3 different pages for this report. The names I am going to use are “Sales Overview, Product and Customer information/insights, and Employee performance”. As I continue to break, the following 3 will give a brief description of what they will include. Within the Sales overview, you will notice a variety of KPI’s cards that will result in Total Sales, Orders and average freight. Within this page I also used a stacked bar chart to help the company navigate and understand what category generated the most sales. On Page 2 this will result in a stacked bar chart showing best selling products by the Product Name. Next within the visual I created a table view so North Wind Global can view the selected customer of their choice to see what the “Total sales, Total Orders, Company Name, Category ID, Category Name” this a valuable feature so North Wind can Identify Product trends and Customer Insight. Underneath the Table I generated a slicer you can scroll through and select what customer you want insight on. Plus I added a Matrix of the Category ID so if the users get’s confused or lose their train of thought the matrix would be a good addition to help the user understand what specific category they are looking at. On Page 3 within employee performance this will include a bar chart showing the average sales by employees, Total Orders Processed and Total Employee Sales by Employee Name. Creating the bar chart will give North Wind Global the ability to see how each employee is doing when it comes to sales. The following KPI’S included were Total employee sales, Total Orders processed and Average Sales per employee. These visuals are important because they show the user employee’s performance.

Recommendations or key takeaways

While taking the time to do this report I noticed some key takeaways from this report. Some of these take-aways can fall under the categories of Top Products, Top Consumers, Seasonal trends and Employee insights. This Project overall was a game changer giving me the opportunity to create and generate a Power BI report. This was my first time ever using Power BI for this course, so it was pretty interesting to navigate without the physical classroom help like from my undergrad and we had SaaS Viya assignments. Any recommendations for this project I feel like the North Wind Challenge was pretty straight forward honestly so no need for recommendations and those were my key takeaways. Lastly based off the report I took away the when it comes to the sales overview I demonstrated the ideal skill set to interpret the net sales overview for the company to see how they perform. When it comes to the Employee page this was a huge takeaway to understand how the employee performs at their job level, this is crucial because as a business you want to make sure your product is getting sold so I developed KPI's and charts to help Identify total sales to help out North Wind.

Reflection

This project was something that I ultimately enjoyed from the start of picking which data set I was going to use. This Project helped me to use a “real business” model data set and to apply skill sets used from training to Power BI. I used a variety of skills from ETL, DAX to story telling with visuals lol. I came across some challenges when it came to this dataset. I noticed I struggled to import the data. I'm not sure why but the file wasn't showing up for Power BI but it would show for my regular folder so that was 1. Another challenge I faced was cleaning and merging the dataset. That was an interesting feature learning how to clean data and merge it the correct way is interesting. I learned about the creative effects that go into Power BI when you are doing visualizations. It kind of almost makes you want to freelance with the variety of charts and information you can visualize using both.

Appendices