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Data Analytics

Sales Dashboard Report

Report: Steps in Creating a Power BI Dashboard

Introduction

This report details the process of creating a comprehensive Power BI dashboard for analyzing sales and order data. The dashboard consists of three pages: Home (KPIs), Revenue Analysis, and Products and Orders. The purpose of this dashboard is to provide insights into sales performance, customer behavior, and product trends, using calculated measures, relevant visuals, and slicers for interactive analysis.

Step 1: Data Preparation and Cleaning

Initial Dataset

The initial dataset included the following columns:

- **OrderDetailID**
- **OrderID**
- **OrderDate**
- **ShipDate**
- **DueDate**
- **StatusID**
- **Status**
- **OnlineOrderFlag**
- **CustomerID**
- **SalesPersonID**
- **Territory**
- **TerritoryGroup**
- **ShipMethodID**
- **ShipMethod**

- **ProductID**
- **Product**
- **ProductCategory**
- **ProductSubcategory**
- **UnitPrice**
- **LineTotal**
- **TaxAmount**
- **Freight**
- **TotalDue**

Data Cleaning

To streamline the dataset and eliminate redundancy, the following columns were removed:

1. **ShipMethodID and ShipMethod:**
    - **Reason: These fields were constant across all rows, as the shipping method was always "CARGO TRANSPORT" with an ID of 5.**
2. **OnlineOrderFlag:**
    - **Reason: This field always had a value of 0, making it irrelevant to the analysis.**

After these adjustments, the dataset was reduced to the most relevant columns for analysis.

Step 2: Creating Calculated Measures

To derive actionable insights, the following calculated measures were created in Power BI:

1. **Average Selling Price:**
    - **Formula: Average Selling Price = AVERAGE(UnitPrice)**
    - **Purpose: To analyze the average price at which products are sold.**
2. **Total Revenue:**
    - **Formula: Total Revenue = SUM(LineTotal)**
    - **Purpose: To calculate the overall revenue from sales.**
3. **Number of Customers:**
    - **Formula: Number of Customers = DISTINCTCOUNT(CustomerID)**
    - **Purpose: To determine the total number of unique customers.**
4. **Number of Products:**
    - **Formula: Number of Products = DISTINCTCOUNT(ProductID)**

- **Purpose: To assess the variety of products sold.**

5. **Number of Salespersons:**
    - **Formula: Number of Salespersons = DISTINCTCOUNT(SalesPersonID)**
    - **Purpose: To track the number of sales representatives.**
6. **Tax Contribution:**
    - **Formula: Tax Contribution = SUM(TaxAmount)**
    - **Purpose: To calculate the total taxes collected.**
7. **Number of Unique Products:**
    - **Formula: Number of Unique Products = DISTINCTCOUNT(ProductID)**
    - **Purpose: To identify the diversity of unique products sold.**
8. **Freight Contribution:**
    - **Formula: Freight Contribution = SUM(Freight)**
    - **Purpose: To assess the total freight charges.**

Step 3: Creating Visualizations

The following visualizations were created to present insights from the data:

Page 1: Home (KPIs)

This page serves as an overview of the key performance indicators (KPIs) for the business:

- **Total Revenue**
- **Number of product Sub Category**
- **Total quantity Sold**
- **Average Selling Price**
- **Number of Customers**
- **Number of Products**
- **Number of Salespersons**
- **Tax Contribution**
- **Freight Contribution**

These KPIs are displayed using Card Visualizations for quick and clear insights.

Page 2: Revenue Analysis

This page focuses on analyzing revenue across different dimensions, using the following visuals:

1. **Revenue by Year and Quarter:**
    - **A Line chart showing revenue trends over time.**
2. **Revenue by SalesPersonID:**
    - **A bar chart analyzing revenue contributions from individual salespersons.**
3. **Revenue by Product Category:**
    - **A pie chart to visualize the revenue share of different product categories.**
4. **Revenue by Territory:**
    - **A bar chart displaying revenue distribution across different territories.**
5. **Revenue by Product Subcategory:**
    - **A Clustered bar chart to show detailed revenue performance by product subcategories.**

Page 3: Products and Orders

This page delves into product and order-related metrics:

1. **Total Quantity Sold by Product Category:**
    - **A Column chart to show product category performance based on quantity sold.**
2. **Total Order Quantity by Territory:**
    - **A column chart visualizing the number of orders across territories.**
3. **Customers Who Buy Most Products:**
    - **A bar chart showing the top customers based on the number of products purchased.**
4. **Total Number of Customers by Territory:**
    - **A pie chart visual displaying customer distribution across different territories.**
5. **Average Selling Price by SalesPersonID:**
    - **A Bar chart chart analyzing the average selling price achieved by each salesperson.**
6. **Total Number of Salespersons by Territory:**
    - **A column chart showing the distribution of salespersons across territories.**
7. **Total Order Quantity by SalesPersonID:**
    - **A bar chart visualizing the performance of each salesperson in terms of order quantity.**

Step 4: Adding Slicers for Interactivity

To enhance interactivity and allow users to filter data dynamically, the following slicers were added:

- **Status: Filter data by order status.**
- **Territory: Analyze data for specific territories.**
- **Year, Month Name: Focus on data from a specific year and Month.**
- **Product: Filter data by individual products.**
- **Product Subcategory: Analyze specific product subcategories.**
- **Product Category: Explore data for specific product categories.**

Step 5: Structuring the Dashboard

The dashboard was designed with a clear structure and logical flow, divided into three pages:

1. **Home (KPIs):**
    - **This page provides an at-a-glance overview of the business's key metrics.**
2. **Revenue Analysis:**
    - **This page dives into revenue trends and comparisons across various dimensions such as time, salespersons, territories, and product categories.**
3. **Products and Orders:**
    - **This page focuses on product performance, order trends, and customer behavior.**

Each page is designed with user-friendly visuals and slicers for easy navigation and data exploration.