Business Intelligence Report

Sales Performance Analysis Dashboard Using Power BI

1. Introduction

This report presents an interactive Sales Performance Dashboard developed using Power BI. The dashboard provides a comprehensive analysis of e-commerce sales, profit margins, customer distribution, and category performance based on the DataCo Smart Supply Chain dataset.

The objective of this project is to demonstrate the use of Business Intelligence (BI) techniques — including data modeling, DAX calculations, and visualization design — to support decision-making and highlight key sales insights across years, markets, and products.

Main Goal: Understand overall business health, revenue growth, and trends

These questions focus on overall revenue, growth, and sales trends.

1. What is the total sales revenue, profit, and number of orders this year?
2. How have monthly sales and profit changed over time?
3. Which months or quarters achieved the highest sales?
4. What is the average order value (AOV) and how has it evolved?
5. Which sales channels or departments contribute the most to revenue?
6. What is the profit margin (%) across all categories?
7. Which countries or regions generate the highest sales?

2. Data Description

A DataSet of Supply Chains used by the company DataCo Global was used for the analysis. Dataset of Supply Chain , which allows the use of Machine Learning Algorithms and R Software. Areas of important registered activities : Provisioning, Production , Sales , Commercial Distribution. It also allows the correlation of Structured Data with Unstructured Data for knowledge generation.

Dataset link : https://data.mendeley.com/datasets/8gx2fvg2k6/5

This is the dataset of Supply Chains used by the company DataaCo Global which includes a collection of their products sold, financial details(profit, loss, total sales etc.), Shipping details, and customer details such as sales, demographics, and transaction details. The data spans to 91 MB engulfing details of 180,519 customers spanning to 53 columns related to Clothing, Sports, and Electronic Supplies.

It contains structured data related to sales transactions, customers, products, and delivery performance.

Key Tables:

Table	Description
Orders	Transactional data: sales, profit, discounts, and shipping dates
Products	Product-level data: name, category, market, price
Customers	Customer information: location, segment, and region
Date	Custom date dimension for time-based analysis

3. Data Preparation

- ❖ Removed duplicates and missing values
- ❖ Formatted date and currency fields
- ❖ Created calculated columns for Year, Month, and Delivery Delay (Days)
- ❖ Implemented a **Star Schema** with Orders as the Fact table and three dimension tables (Customers, Products, Date)

4. Data Modeling and DAX Measures

A **Star Schema** model was designed to improve analytical performance and simplify relationships.

Relationships:

- Orders[Customer ID] → Customers[Customer ID]
- Orders[Product ID] → Products[Product ID]
- Orders[Order Date] → Date[Date]

5. Dashboard Design

The dashboard consists of **six core visual components**:

1. **KPI Cards** – Show Total Sales, Total Profit, Orders, Customers, and Profit Margin %.
2. **Monthly Sales & Profit Trend (Line Chart)** – Displays performance changes over time.
3. **Sales by Year (Bar Chart)** – Highlights total sales growth and peak years.
4. **Average Order Value (Line Chart)** – Tracks buying trends and customer spending.
5. **Profit Margin by Category (Bar Chart)** – Shows most profitable product categories.
6. **Sales by Country (Map)** – Visualizes geographic distribution of revenue.

Additionally, slicers for **Month** and **Category** allow interactive filtering, enabling users to explore data dynamically.

6. Tools & Techniques

- **Data Transformation:** Power Query Editor
- **Data Modeling:** Star Schema design
- **DAX Measures:** Custom KPIs and time intelligence functions
- **Visualization:** Interactive cards, line and bar charts, map visuals
- **Deployment:** Power BI Service (published with public embed link)

7.Conclusion

The Sales Performance Dashboard demonstrates the power of Business Intelligence (BI) and Data Visualization in transforming raw data into actionable insights. By leveraging Power BI, organizations can track revenue performance, identify growth opportunities, and optimize profitability across markets.

Dashboard Access: Supermarket Sale Dashboards - Power BI