

## **Business Intelligence Report**

### **Project Title: Strategic Insights & Decision Support Dashboard**

#### **1. Introduction**

This Business Intelligence project focuses on developing a Power BI dashboard to provide strategic insights and data-driven decision support for e-commerce sales and product performance. The dashboard consolidates sales, profit, and category-level data to identify key trends, highlight top-performing products, and uncover areas for improvement.

The analysis revealed that the Nike Men's category generated the highest revenue, while Camping & Hiking products maintained strong profit margins. The report provides valuable insights into sales distribution, category contributions, and customer segments — empowering management to make more informed strategic and operational decisions.

The main objectives of this BI project are:

- ❖ To visualize overall business performance across multiple dimensions (sales, profit, and product categories).
- ❖ To identify the top 10 products and categories contributing to total revenue.
- ❖ To measure profit margin trends and detect underperforming categories.
- ❖ To support strategic decision-making through interactive, real-time data analysis.

#### **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 DataCo 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**

The dataset was processed in Power Query (ETL) to ensure data consistency and usability:

Extract: Imported CSV dataset into Power BI.

Transform:

- ❖ Removed nulls and duplicates
- ❖ Formatted date and numeric fields
- ❖ Created calculated columns (Profit, Delivery Delay)

Load: Structured data loaded into Power BI model using a Star Schema.

Relationships:

Orders ↔ Products (Product ID)

Orders ↔ Customers (Customer ID)

Orders ↔ Date (Order Date)

**4. Dashboard Design**

The **Strategic Insights Dashboard** was designed with a **business-executive focus**, emphasizing clarity, interactivity, and key decision metrics.

◆ **Dashboard Sections**

Section	Visual	Purpose
KPI Overview	Card visuals	Display key performance indicators (Sales, Profit, Margin, Orders)
Top 10 Products by Sales	Bar chart	Identify best-performing products
Profit Margin by Category	Column chart	Compare profitability across product categories

<b>Sales Trend by Category</b>	Line chart	Analyze category-level sales patterns over time
<b>Category Contribution to Total Sales</b>	Donut chart	Show share of each category
<b>Sales vs Profit Correlation</b>	Scatter plot	Visualize sales-profit relationship
<b>Category Tree Map</b>	Tree map	Highlight revenue by category and sub-category
<b>Storytelling Textbox</b>	Dynamic summary	Generate auto-insights for executives

## 5. Key Finding and Insight

### Top Performance

- ❖ **Nike Men's Collection** generated **\$1.6M** in total sales, leading overall revenue.
- ❖ **Camping & Hiking** products contributed **15%** of total sales with the highest profit margin.

### Profitability

- ❖ Overall profit margin: **10.9%**, with **Golf** and **Fitness** categories performing best.
- ❖ **Music and CDs** showed weak profitability (<13%), suggesting review for discount strategy or product optimization.

### Trends

- ❖ Sales peaked in **2016**, followed by a **decline in 2017**, consistent with seasonal demand shifts.
- ❖ **Corporate and Consumer segments** were the most profitable compared to Home Office customers.

### Business Impact

The dashboard allows business leaders to:

- ❖ Track real-time sales and profit performance.
- ❖ Identify top-performing and underperforming categories.
- ❖ Support inventory, pricing, and promotional strategies with data insights.
- ❖ Streamline reporting — replacing manual Excel reporting with automated Power BI visuals.

## **6. Tools & Techniques**

- ❖ Power BI Desktop – Data modeling, visualization, and dashboard design
- ❖ Power Query – Data cleaning and transformation
- ❖ DAX – Advanced analytics and KPI calculations
- ❖ Microsoft Excel / CSV – Raw data source

## **7. Conclusion**

The Strategic Insights & Decision Support Dashboard transforms raw sales data into actionable intelligence. It provides an end-to-end view of e-commerce performance, enabling faster and smarter business decisions. By integrating key KPIs, visual analytics, and storytelling, this dashboard exemplifies the power of Business Intelligence in optimizing profitability and guiding strategy.

Dashboard Access: [Page 2 - Supermarket Sale Dashboards - Power BI](#)

## **Recommendation**

- ❖ Integrate customer satisfaction or review sentiment analysis.
- ❖ Add product return and delivery performance KPIs.
- ❖ Connect live SQL or cloud data source for real-time updates.