Super Store Data Analysis

Meet The Insight Seekers

Nada Elsayed

Rana Mohammed

Mariam Ehab

Expert in data preparation and validation.

Maha Ali

Tabark Mahmoud

Essraa Saeed

Project Goals: Unlocking Super Store Potential

Our analysis aims to provide actionable insights into key business areas, optimising performance and informing strategic decisions.

Sales Performance

Identify high-profit vs. low-profit products.

Customer Behaviour

Analyse customer segments for targeted strategies.

Regional Insights

Understand performance across different regions.

Shipping Efficiency

Study delivery delays and logistics.
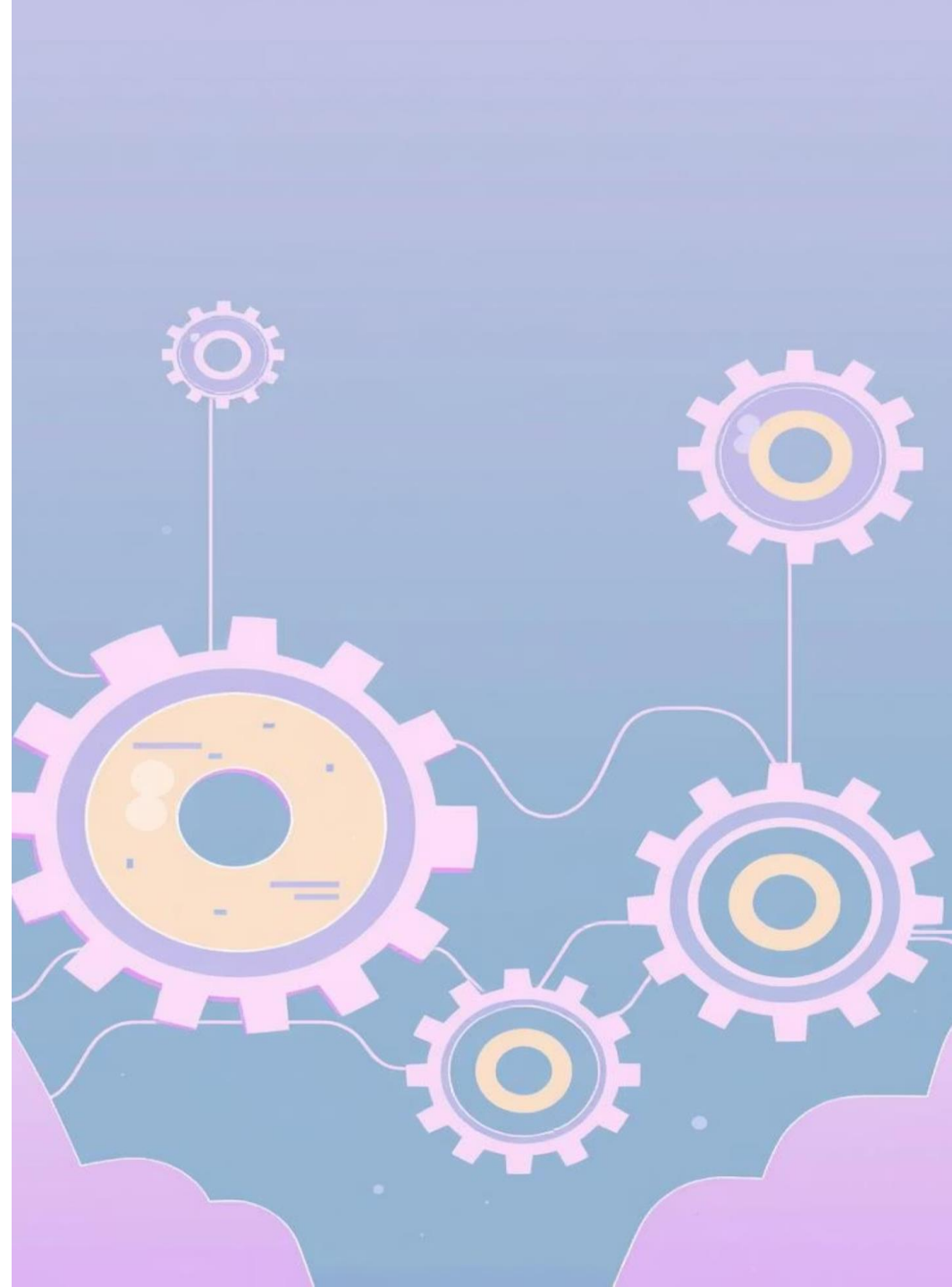
Decision Support

Build interactive dashboards.

Data Set

Initially, the dataset presented no missing values or duplicates. Our focus shifted to enhancing its analytical power through feature engineering.

Dataset Shape

Original: (9800, 18)No missing values or duplicates detected initially.

Data Transformation & Cleaning: Building a Robust Foundation

1. Quantity

2. Cost

3. Profit per Unit

4. Order Month & Year

5. Delivery Days

6. Cost per Unit

7. Selling Price per Unit

8. Total Profit

Understanding the Super Store Dataset

> The raw dataset, though comprehensive, necessitated significant data transformation and the creation of new calculated fields to unlock its full analytical potential.

Key Data Points Included:

- Unique Identifiers (Row ID, Order ID, Customer ID, Product ID)

- Date & Time (Order Date, Ship Date, Order Month, Order Year)

- Customer Demographics (Customer Name, Segment, Country, City, State, Postal Code, Region)

- Product Details (Category, Sub-Category, Product Name)

- Sales & Profit Metrics (Sales, Quantity, Cost, Profit per Unit, Total Profit)

- Shipping Logistics (Ship Mode, Delivery Days, Cost per Unit, Selling Price per Unit)

Data Modeling – Super Store Analytics

Model Type: Star Schema

This presentation outlines a robust data model for Super Store analytics, focusing on a Star Schema design to enable powerful insights. We delve into the FactSales table, its associated dimensions, and critical DAX measures. This information is tailored for a Data Analysis and Business Intelligence Review Panel.

The Core: FactSales Table

The FactSales table serves as the central pillar of our data model, capturing the granular transactional data from every sale within the Super Store. It is designed for efficiency and comprehensive reporting.

Transactional Data Hub

Contains detailed transactional information, providing the foundation for all sales-related analysis.

High Granularity

Each row represents a single order line, ensuring precision in reporting and analysis down to the individual product level.

Numerical Metrics Source

All key numerical metrics such as sales, cost, and quantity originate from this table, facilitating accurate aggregations.

Key Columns within FactSales:

- Sales
- Cost
- Cost Per Unit
- Customer ID
- Delivery Days
- CountryID (from DimCountry)
- SegmentID (from DimSegment)
- ShipmodeID (from DimShipmode)

- Order Date
- Order ID
- Order Month
- Order Year
- Postal Code
- Product ID
- Profit per unit
- Quantity
- Row ID

Dimensional Insights: Enriching Our Data

Dimension tables provide the contextual attributes that allow us to slice, dice, and filter our factual data, turning raw numbers into meaningful business intelligence. Each dimension offers a unique lens through which to view sales performance.
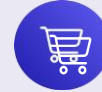
DimCustomer

Customer ID, Customer Name
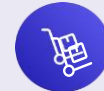
DimDate

Date, Month, Quarter, Year

DimProduct

Product ID, Category, Sub-Category

DimSegment

Segment, SegmentID

DimShipmode

Ship Mode, ShipmodeID

Powerful Measures: Unlocking Business Value

These calculated measures, implemented using DAX, transform raw data into actionable business intelligence. Each measure is crafted to provide specific insights, driving informed decision-making across the Super Store operations.

Customers
Counts unique customers. Insight: Customer base size and growth.

Orders
Total number of distinct orders. Insight: Volume of transactions.

Avg Order Value
Average value per order. Insight: Customer spending habits.

Profit Calculation
Calculates total profit. Insight: Overall business profitability.

Revenue Calculation
Calculates total revenue. Insight: Top-line sales performance.

Top Category
Identifies the highest performing product category. Insight: Key revenue drivers.

Total Quantity Sold

Worst Product by Sales

Geographical Distribution Overview

- **Total Sales:** Overall revenue generated across all regions.
- **Total Profit:** Net profit achieved from all transactions.
- **Number of Orders:** Volume of customer purchases.
- **Average Profit per Customer:** Profitability on a per-customer basis.
- **Number of Customers:** Total active customer base.

Regional Performance

Analyse which geographical areas exhibit the highest sales volumes and profit margins, identifying our strongest markets. Conversely, pinpoint low-profit regions to strategise improvement.

Product Performance Analysis

Average Profit Margin

Percentage of profit from sales.

Total Cost

Overall expenditure on products.

Total Revenue

Gross income from all product sales.

Average Sales per Product

Mean sales volume for each item.
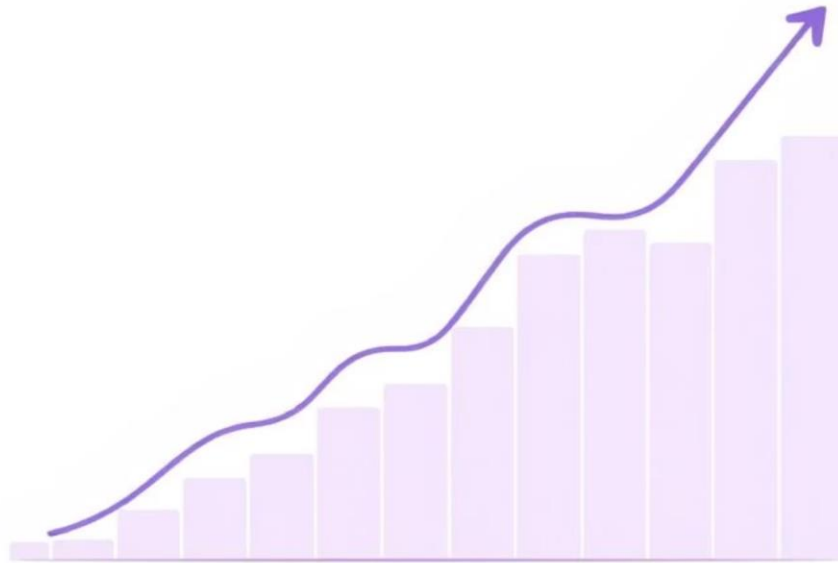
Average Profit per Product

Mean profit generated by each product.

Worst Product by Sales

Identify underperforming products.

Overall Sales Performance

Total Revenue

Gross income generated.

Total Profit

Net earnings after costs.

Average Order Value

Mean value per transaction.

Shipment & Delivery Analysis

Total Shipments

Volume of all dispatched orders.

Orders per Ship Mode

Breakdown by delivery method.

Average Sales per Ship Mode

Revenue generated by each mode.

Average Delivery Days

Typical transit time for orders.