

# Data Model: Retail & Supply Chain

## 1. Fact Table

### FactSales

Column	Type	Description
SalesID	INT (PK)	Unique sale ID
DateKey	INT (FK)	Reference to Date Dimension
ProductKey	INT (FK)	Reference to Product Dimension
CustomerKey	INT (FK)	Reference to Customer Dimension
StoreKey	INT (FK)	Reference to Store Dimension
SupplierKey	INT (FK)	Reference to Supplier Dimension
Quantity	INT	Number of units sold
UnitPrice	FLOAT	Selling price per unit
TotalAmount	FLOAT	Quantity × UnitPrice
Discount	FLOAT	Discount amount
CostPrice	FLOAT	Purchase cost per unit

## 2. Dimension Tables

### DimDate

Column	Type	Description
DateKey	INT (PK)	YYYYMMDD format
Date	DATE	Actual date
Year	INT	Year part
Month	INT	Month part
Day	INT	Day part
Weekday	TEXT	Name of the day

### DimProduct

Column	Type	Description
ProductKey	INT (PK)	Unique product ID
ProductName	TEXT	Name of the product
Category	TEXT	Product category
SubCategory	TEXT	Product subcategory
Brand	TEXT	Brand name

UnitCost	FLOAT	Base purchase cost
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### **DimCustomer**

Column	Type	Description
CustomerKey	INT (PK)	Unique customer ID
FirstName	TEXT	First name
LastName	TEXT	Last name
Gender	TEXT	Gender
City	TEXT	Customer's city
Region	TEXT	Customer's region

### **DimStore**

Column	Type	Description
StoreKey	INT (PK)	Unique store ID
StoreName	TEXT	Name of the store
City	TEXT	City
Region	TEXT	Region

### **DimSupplier**

Column	Type	Description
SupplierKey	INT (PK)	Unique supplier ID
SupplierName	TEXT	Supplier name
Country	TEXT	Country of origin
		Contact person name
ContactName	TEXT	

## **Essential DAX Measures**

Here's a comprehensive list of DAX measures categorized by business area:



### **Sales Performance**

```
Total Sales = SUM(FactSales[TotalAmount])
```

```
Total Quantity Sold = SUM(FactSales[Quantity])
```

```
Average Selling Price = DIVIDE([Total Sales], [Total  
Quantity Sold])
```

Total Cost = SUM(FactSales[CostPrice])

Gross Profit = [Total Sales] - [Total Cost]

Gross Margin % = DIVIDE([Gross Profit], [Total Sales])

Average Discount = AVERAGE(FactSales[Discount])



## **Product & Inventory**

Top Products by Sales =  
TOPN(10, SUMMARIZE(DimProduct, DimProduct[ProductName],  
"Sales", [Total Sales]), [Total Sales], DESC)

Product Contribution % =  
DIVIDE([Total Sales], CALCULATE([Total Sales],  
ALL(DimProduct)))



## **Customer Metrics**

Unique Customers = DISTINCTCOUNT(FactSales[CustomerKey])

Average Sales per Customer = DIVIDE([Total Sales],  
[Unique Customers])



## **Store & Regional Performance**

Total Sales by Store = CALCULATE([Total Sales],  
ALLEXCEPT(DimStore, DimStore[StoreName]))

Total Sales by Region = CALCULATE([Total Sales],  
ALLEXCEPT(DimStore, DimStore[Region]))



## **Supplier & Cost Metrics**

Purchase Cost = SUM(FactSales[CostPrice])

Top Suppliers by Cost =  
TOPN(10, SUMMARIZE(DimSupplier,  
DimSupplier[SupplierName], "Cost", [Purchase Cost]),  
[Purchase Cost], DESC)



## Time Intelligence

Assumes DimDate is marked as a Date table.

```
Sales This Year = CALCULATE([Total Sales],  
YEAR(DimDate[Date]) = YEAR(TODAY()))
```

```
Sales Last Year = CALCULATE([Total Sales],  
SAMEPERIODLASTYEAR(DimDate[Date]))
```

```
YOY Growth % = DIVIDE([Sales This Year] - [Sales Last  
Year], [Sales Last Year])
```

```
Sales MTD = TOTALMTD([Total Sales], DimDate[Date])
```

```
Sales YTD = TOTALYTD([Total Sales], DimDate[Date])
```



## Recommended Visuals for Dashboard



### Executive Summary Page

- **Card visuals:**
  - Total Sales
  - Gross Profit
  - Gross Margin %
  - Unique Customers
- **Line chart:**
  - Sales Trend (by month/year)
- **Bar chart:**
  - Top 10 Products by Sales
  - Top Stores by Sales



### Product & Inventory Analysis

- **Clustered bar chart:** Sales by Product Category and Subcategory

- **Stacked column chart:** Sales and Quantity by Brand
- **Treemap:** Product Contribution to Total Sales

## **Customer & Demographics**

- **Donut chart:** Sales by Gender
- **Map visual:** Sales by Customer City/Region
- **Bar chart:** Average Sales per Customer by Region

## **Store & Region Performance**

- **Matrix:** Store vs. Product Category – Total Sales, Quantity
- **Bar/Column chart:** Sales by Store and Region
- **Heatmap:** Region-wise Gross Margin %

## **Supplier & Procurement View**

- **Bar chart:** Top 10 Suppliers by Purchase Cost
- **Table:** Supplier Name, Total Cost, # Products Supplied

## **Time-Based Trends**

- **Line chart with slicers:** Sales YTD, MTD, YOY comparison
- **Area chart:** Sales & Profit Trends over last 12 months
- **Slicer panel:** Year, Month, Product Category, Region

## **Bonus Features**

- **KPI Cards with trending arrows** for YoY and MoM changes.
- **Drill-through pages:** Customer Profile, Product Detail View.
- **Bookmarks & Selection Pane** for a professional navigation panel.
- **Tooltips with mini-charts** on hover for added insight.