Project Description

Dataset Overview

The dataset used in this Power BI project is from Kaggle, titled "DataCo Smart Supply Chain for Big Data Analysis." It includes comprehensive information on various aspects of supply chain management such as sales, customer details, product categories, shipping details, and more. This dataset is crucial for analyzing and optimizing supply chain processes, enabling data-driven decision-making for inventory management, demand planning, sales performance, delivery efficiency, and customer insights.

Importance of the Dataset

This dataset is valuable as it provides a holistic view of the supply chain, including sales data, delivery performance, customer demographics, and inventory details. By leveraging this dataset, businesses can improve their operational efficiency, forecast demand, manage inventory effectively, and enhance customer satisfaction.

Dashboards Overview

1. Sales Dashboard

The Sales Dashboard provides insights into the overall sales performance, highlighting key metrics that help in understanding the sales distribution and trends.

- Total Sales: Represents the cumulative sales value.
- Average Discount per Order: Shows the average discount applied per order.
- Total Sales by Category: Displays sales distribution across different product categories.
- Total Sales by Region: Illustrates sales performance in various regions.
- Total Sales by Product Name: Highlights the sales for individual products.
- Average Discount per Order by Category: Analyzes discount patterns across product categories.

2. Inventory Management & Forecasting Dashboard

This dashboard focuses on inventory levels, inventory value, and forecasting sales to ensure optimal stock levels and prevent stockouts.

- Total Products in Inventory: Shows the total number of products available in the inventory.
- Inventory Value: Calculates the total value of the inventory.
- Inventory Turnover Rate: Measures how often inventory is sold and replaced over a period.
- Total Sales by Time to Forecast: Uses historical sales data to forecast future sales.
- Average of Order Item Quantity by Time: Analyzes the average quantity of items ordered over time
- Stockout: Indicates instances where inventory levels hit zero.

3. Delivery Performance Dashboard

This dashboard provides insights into the efficiency of the delivery process, tracking key metrics related to shipping and delivery times.

- On-time Delivery Rate: Percentage of deliveries made on time.
- Late Delivery Count: Total number of late deliveries.
- Late Delivery Risk Rate: Percentage of orders at risk of late delivery.
- Average Shipping Time: Average time taken to ship orders.
- Average Shipping Time by Time: Trends in shipping time over different periods.
- Order Count by Delivery Status: Distribution of orders by their delivery status.

4. Customer Analysis Dashboard

This dashboard focuses on customer behavior and segmentation, providing insights into customer retention, repeat purchases, and sales performance by customer segments.

- Repeat Customer Rate: Percentage of customers who make repeat purchases.
- Customer Retention Rate: Measures how many customers continue to purchase over time.
- Average Order Value: Average value of each order.
- Total Sales by Customer by Time: Tracks sales performance over time for individual customers.
- Total Sales by Customer Segment: Analyzes sales distribution across different customer segments.
- Average Order Value by Customer Segment: Shows the average order value for each customer segment.
- Customer Segment by Product Name and Category: Matrix displaying the distribution of products and categories across customer segments.