

Business Problem Statement

A growing e-commerce and retail organization is facing challenges in effectively monitoring and evaluating the performance of its vendors across different product categories. The operations and procurement teams have observed inconsistencies in delivery timelines, product quality, and order fulfillment accuracy—leading to stockouts, increased operational costs, and reduced customer satisfaction.

Despite having large amounts of vendor and order data, the company lacks a centralized system to analyze vendor performance trends over time. Management wants to understand which vendors consistently meet expectations, which ones cause delays, and how vendor performance impacts overall supply chain efficiency and customer experience.

You are tasked with analyzing the company's **Vendor Performance dataset** to answer the overarching business question:

“How can the company use vendor performance metrics to improve supply chain efficiency, reduce delays, and strengthen vendor relationships?”

Deliverables

1. **Data Preparation & Modeling (Python):** Clean and transform the raw dataset for analysis.
2. **Data Analysis (Python):** Organize the data into a structured format, simulate business transactions, and run queries to extract insights on customer segments, loyalty, and purchase drivers.
3. **Visualization & Insights (Power BI):** Build an interactive dashboard that highlights key patterns and trends, enabling stakeholders to make data-driven decisions.
4. **Report and Presentation:** Write a clear project report summarizing your key findings and business recommendations. Prepare a presentation that visually communicates insights and actionable recommendations to stakeholders.
5. **GitHub Repository:** Include all Python scripts, SQL queries, and dashboard files in a well-structured repository.