Poshem Business School

Exploratory Data Analysis Project

Project Overview:

Poshem Business School's CEO, **Simon E. Akhamie** has tasked the data analytics team with conducting an exploratory data analysis (EDA) on the company's sales dataset. The objective is to derive meaningful insights and patterns that can inform strategic decisions. The dataset comprises information on orders, customers, products, and shipping details.

Exploratory Data Analysis (EDA) Questions:

Overview:

- What is the timeframe of the dataset? (Start and end date)
- How many rows and columns are there in the dataset?
- Are there missing values?
- What are the data types of each column?
- Are there duplicates in the dataset?
- Give a quick statistical description of numerical contents in the dataset.

Order Statistics:

- How many unique orders are there in the dataset?
- What is the distribution of order statuses (e.g., delivered, pending)?
- How many unique customers are there?

Geographical Insights:

- Which countries are included in the dataset?
- What is the distribution of orders across different regions?
- Can you identify the top 5 cities with the highest number of orders?

Product Categories:

- How many unique product categories are there?
- What are the most popular product categories based on sales?
- Can you identify the top 5 selling products?

Customer Segmentation:

- How are customers segmented based on the "Segment" column?
- What is the average order value for each customer segment?

Shipping Insights:

- What are the different shipping modes available?
- How does the shipping mode relate to the order date and delivery date?
- Are there any patterns in shipping modes based on regions?

Sales Distribution:

- What is the overall distribution of sales values?
- Are there any outliers in the sales data?
- Can you visualize the distribution of sales for each product category?

Profit Analysis:

- Calculate the total profit for each order.
- What is the average profit margin?
- Identify the top 5 orders with the highest profit.

Project Deliverables:

- Summary of key findings.
- Any actionable recommendations based on the analysis.

The goal of this EDA project is to empower Poshem Business School with data-driven insights that can guide decision-making and contribute to the company's overall success.