

Dear Data Science Team Leader,

I have performed the following Exploratory Data Analysis(EDA) on the DataSet.

- 1) I have completed the Statistical Analysis of the dataset, which includes
 - Mean, Median, Mode, Standard Deviation, Variance, and Range
 - Percentiles, Histogram, Box Plot, Scatter Plot, and Correlation Analysis
 - Hypothesis Testing(One-Sample Test), ANOVA, and Chi-Square Test
- 2) From my perspective from analyzing the dataset, I have tried to answer the following ten questions, which might help expand the business, and these question has been solved using EDA.
 - a) What is the distribution of transaction amounts?
 - b) What are the most popular products and categories?
 - c) What are the average unit prices and quantities?
 - d) What are the most popular payment types?
 - e) What are the peak hours for transactions?
 - f) What are the days of the week with the most transactions?
 - g) What are the customer types that spend the most money?
 - h) What products and categories are most popular with different customer types?
 - i) What are the trends in transaction amounts over time?
 - j) What are the trends in product and category popularity over time?

The most popular product is fruits, and the category is 998. Other products are vegetables, and its class is 846. Other products have significantly fewer categories. The most popular payment type is cash, whose transaction count is 2027. Then credit cards, whose transaction count is 1949. E-wallets, whose transaction count is 1935, and the last debit card, whose transaction count is 1918. The peak hour of a transaction is 11 hours, and the transaction count is 738. The other peak hours of descending order to transaction count are 16, 18, 10, and 12. Wednesday and Tuesday have significantly higher transaction counts than other days. And minor transaction counts are observed on Thursday and Saturday.

- The company's computer servers should be ready to work on peak hours 11, 16, 18, 10, and 12. These numbers are arranged in descending order to transaction count.
- If the company has to update its software or hardware or do any other work, it should do it on Thursday and Saturday because minor transaction counts are observed on these days, such that the loss observed is less. And should not be done during the peak hours.
- Fruits and vegetables should be stored in High amounts compared to others because its sailed high compared to others.

Best regards,
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