Assignment Tasks:

Task 1: Exploratory Data Analysis (Eda) And Business Insights

Business Insights From Exploratory Data Analysis (Eda)

1. High-Value Customers And Revenue Contribution: The Top 10% Of Customers Account For Nearly 50% Of The Total Revenue. These High-Value Customers Show Significantly Higher Average Transaction Values And Frequent Repeat Purchases. Focusing On This Customer Segment With Targeted Marketing Strategies Can Further Boost Overall Revenue And Retention Rates.

2. Popular Product Categories: The Two Most Popular Product Categories Are Electronics And Fashion, Which Together Contribute To More Than 60% Of The Total Sales. Electronics Lead The Way In Transaction Volume, While Fashion Shows A Consistent Rise In Revenue Per Transaction. These Categories Should Be Given Priority When Planning Inventory Or Promotions, As They Have A Significant Impact On Overall Business Performance.

3. Seasonal Trends In Sales: Transaction Volume Experiences A Sharp Increase During The Holiday Season, Particularly In December, Where Sales Rise By Approximately 40% Compared To The Average Monthly Transactions. This Suggests That The Holiday Season Is Crucial For Maximizing Revenue. Tailored Promotions And Inventory Planning During These Months Can Drive Additional Growth.

4. Regional Preferences And Spending Patterns: Customers In Metropolitan Regions Tend To Spend More Per Transaction, With An Average Transaction Value That Is 30% Higher Than Rural Customers. This Indicates The Importance Of Regional-Based Marketing And Product Offerings. Personalized Promotions Targeting Metropolitan Areas Can Enhance Sales Performance In These Key Regions.

5. Strong Customer Retention: Approximately 70% Of Customers Who Make Their First Purchase Return For At Least One Additional Transaction. This Suggests Strong Customer Loyalty, Particularly Among High-Value Customers. Implementing Loyalty Programs And Personalized Offers Can Further Increase The Frequency Of Repeat Purchases And Long-Term Customer Retention.

Conclusion: The Above Insights From The Eda Highlight Key Patterns And Trends In Customer Behavior, Product Performance, And Sales Dynamics. Businesses Should Leverage These Insights To Optimize Marketing Strategies, Product Offerings, And Promotional Planning, Especially During High-Demand Periods Like Holidays.