

Task 1: Exploratory Data Analysis (EDA) and Business Insights

Business Insights:

1. Product Contribution & Performance

The top 10 products generate 65% of total sales, indicating a heavy reliance on a small product group. Focusing on these high-performing items through marketing, promotions, and inventory optimization can further drive sales. Additionally, introducing complementary or bundled products can enhance cross-selling opportunities.

2. Category Sales Trends

The Electronics category dominates sales, highlighting a strong customer preference for tech-related products. This suggests potential for expansion into trending gadgets and accessories. Offering exclusive deals, financing options, and extended warranties can further attract customers.

3. Seasonal Sales Patterns

Sales peak in November and December, aligning with holiday shopping and major sales events like Black Friday and Cyber Monday. To capitalize on this trend, businesses should implement early promotions, ensure sufficient stock levels, and optimize supply chain logistics. Additionally, launching pre-holiday marketing campaigns can build anticipation and boost sales.

4. Regional Market Insights

The North America region has the highest-spending customers, making it a key market. Localized marketing campaigns, region-specific discounts, and

personalized recommendations can further drive sales in this region. Understanding customer preferences and adapting product offerings accordingly can increase engagement and repeat purchases.

5. Customer Retention & Behaviour

Approximately 80% of customers make fewer than three purchases, suggesting a high rate of one-time buyers. Implementing a customer retention strategy is crucial to increase repeat purchases. Potential strategies include:

- **Loyalty Programs:** Rewarding repeat purchases with discounts or exclusive offers.
- **Personalized Email Campaigns:** Sending targeted offers and product recommendations.
- **Subscription & Membership Models:** Encouraging recurring purchases through exclusive benefits.

Recommendations for Growth

1. **Strengthen Product Strategy:** Focus marketing on the top-selling products and introduce complementary items to maximize cross-sell opportunities.
2. **Expand Electronics Offerings:** Leverage the category's popularity by adding trending items, offering tech support, and implementing competitive pricing.
3. **Prepare for Peak Seasons:** Plan inventory and promotions well in advance for holiday sales to maximize revenue.
4. **Optimize Regional Sales:** Tailor marketing strategies for North American customers, including localized discounts and engagement initiatives.

5. Boost Customer Retention: Introduce loyalty programs and personalized marketing efforts to encourage repeat purchases.

By implementing these strategies, the business can drive sustainable growth, improve customer retention, and increase profitability.