Business Insights Report for eCommerce Transactions Dataset

TASK -1

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1. Customer Analysis

Customer Activity Trends: Analysis of customer activity reveals a diverse range of engagement. Many customers transact regularly, while a significant portion has been inactive for over six months. This suggests potential for reactivation campaigns targeting dormant customers. Offering personalized discounts or promotions could re-engage this group.

Revenue by Region: The revenue analysis by region highlights the top-performing regions, with North America contributing the highest revenue, followed by Europe. This indicates stronger market penetration in these areas. Efforts should focus on sustaining these regions while exploring growth opportunities in underperforming regions, such as South America and Africa.

Customer Distribution Across Regions: Regions with higher customer counts correlate with higher revenue, indicating a larger customer base directly impacts sales. However, some regions with moderate customer counts still generate high revenue, suggesting higher average spending per customer.

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2. Product Analysis

Top-Selling Products: The top 10 best-selling products account for a significant portion of total sales, indicating that a few key products drive the majority of revenue. Businesses should focus on maintaining inventory levels and optimizing pricing strategies for these products to sustain profitability.

Popular Product Categories: Product category analysis shows categories like "Electronics" and "Apparel" lead in sales volume. Seasonal or promotional campaigns can further boost sales for these high-performing categories. Additionally, cross-selling strategies could be implemented to encourage customers to explore underperforming categories.

Price vs. Quantity Relationship: A scatterplot analysis of price vs. quantity sold highlights that mid-range products experience the highest sales volume, while premium-priced items are purchased in smaller quantities. This suggests a sweet spot for pricing strategy that balances affordability and profitability.

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3. Transaction Trends

Monthly Revenue Trends: The revenue trend indicates seasonality, with peaks around November and December, likely due to holiday shopping. Businesses should leverage these trends by launching targeted campaigns and ensuring adequate inventory during these high-demand periods. Conversely, efforts to stabilize sales during off-peak months should include discounts and promotional campaigns.

High-Value Customers: High-value customers (top 20% based on revenue) contribute disproportionately to overall revenue. This emphasizes the importance of loyalty programs and exclusive perks to retain this segment. Personalized marketing can further strengthen their engagement and spending habits.

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4. Cross-Dimensional Insights

Region-Product Preferences: A heatmap analysis of region-category sales reveals varying preferences. For instance, "Electronics" is popular in North America, while "Home & Living" sees stronger sales in Europe. These insights should inform region-specific inventory planning and targeted marketing campaigns to maximize impact.

Customer Retention by Signup Year: Retention analysis by signup year shows a declining trend in customer acquisition in recent years. This highlights the need to reinvigorate marketing strategies to attract new customers and retain existing ones. Focused efforts to understand and address the reasons behind declining signup rates are crucial.