

E-Commerce Data Analysis Report by SYLVIA IMISI

Introduction

This report presents insights from an e-commerce dataset. The primary goal of this analysis was to answer real business questions. The analysis focused on auditing sales performance, understanding customer behavior, evaluating order fulfillment, and identifying product trends. This is crucial for improving decision making around logistics, inventory, and marketing.

Customer Insights

The goal of the customer insights section was to understand what our customers are buying and who our top spenders are. This helps us determine which products and brands to keep in stock.

- Top and customers by total spend:

- Tanya – ₦151,438
- Aaron – ₦144,598
- Laura – 120409,

Sarah spent the least amount - ₦12,000 on one order.

- The average order value is ₦49,232.38.

We identified six customer locations: Kaduna, Enugu, Ibadan, Kano, Abuja, and Lagos.

Among these, Abuja had the most frequent returning customers, indicating stronger customer retention.

Sales Performance

Total number of distinct orders: 50

Total revenue generated: ₦24,616,19

Revenue by state revealed that although Kaduna appeared in the customer list, it generated no revenue, indicating no purchases were made. This suggests possible data entry errors or inactive/dummy accounts.

Revenue was generated from customers in Kano, Ibadan, Enugu, Lagos, and Abuja only. with Kano generating the most revenue with = 5,739,73

Product Performance

- Top products by quantity sold:
 - Ankle Boots – 22
 - Handbags – 20
 - Cotton Shirts – 19
- Lowest selling items:
 - Baseball Cap – 3
 - Canvas Totes and Oxford Shoes – 10 each
- Top products by revenue:
 - Ankle Boots – ₦347,600
 - Formal Handbags – ₦268,000
 - Red Turtleneck – ₦236,944
- Lowest revenue items:
 - Baseball Cap – ₦9,600
 - Brown Leather Belt – ₦81,752

Order Fulfillment & Logistics

- 15 orders are still marked as 'Processing'
 - 20 orders have been 'Shipped' but not marked as 'Delivered'
- This could suggest missing delivery confirmations or inadequate follow-up from the logistics team.
- Average shipping duration: 3.18 days
 - By state:
 - Lagos – 3.56 days (highest)
 - Followed by Kano, Enugu, Ibadan
 - Abuja – 2.90 days (lowest)
- This aligns with expectations due to Lagos' traffic and logistical complexity.

Recommendations

Logistics and Fulfillment Improvements

- Investigate the 15 orders still marked as 'Processing' to understand what is delaying their fulfillment.
- Follow up on the 20 orders marked as 'Shipped' but not yet 'Delivered' and ensure proper status updates.
- For states like Lagos with the highest shipping time (3.56 days), explore route optimization or new delivery partners.

Customer and Order Data Audit

- Review entries from Kaduna as no actual orders were recorded from this location.
- Determine if Kaduna records are test data or potential lost sales leads due to system errors.
- Implement better validation checks at the point of customer registration.

Product and Inventory Strategy

- Prioritize top-performing products like Ankle Boots and Handbags in stock planning.
- Re-evaluate low-performing products like Baseball Caps and consider promotional strategies.
- Use quantity and revenue data to identify high-margin vs. high-volume items.

Customer Segmentation for Marketing

- Offer tailored incentives to high-spending customers such as Tanya and Stephanie.
- Promote loyalty programs in Abuja where customer shopping frequency is high.

Improve Data Tracking and Reporting

- Ensure consistent updates of order status across all stages.
- Introduce automated checks to reduce incomplete or inconsistent data entries.

Conclusion

This analysis provided actionable insights across customer behavior, product trends, and logistics. Lagos stands out with longer delivery times and higher sales, suggesting logistical optimization could further improve performance. Some data inconsistencies like inactive customers from Kaduna should also be investigated.