

Exploratory Data Analysis (EDA) Report for eCommerce Transactions

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1. Geographic Distribution Analysis

Key Findings:

- Total Markets: 4 major regions
- Market Leadership: South America (59 customers, 31.79% of revenue)
- Distribution:
 - South America: 59 customers (29.5%)
 - Europe: 50 customers (25%)
 - North America: 46 customers (23%)
 - Asia: 45 customers (22.5%)

Business Insight #1: South America shows the strongest performance with both highest customer count and revenue share (31.79%), suggesting a particularly successful market penetration strategy in this region.

2. Product Performance Analysis

Top 5 Products by Revenue:

1. ActiveWear Smartwatch: \$39,096.97
2. SoundWave Headphones: \$25,211.64
3. SoundWave Novel: \$24,507.90
4. ActiveWear Jacket: \$22,712.56

5. ActiveWear Rug: \$22,314.43

Business Insight #2: The ActiveWear brand dominates the top-selling products, with the Smartwatch generating 55% more revenue than the second-best seller. This suggests a strong brand performance in the premium electronics category.

3. Monthly Sales Trend Analysis

Notable Patterns:

- Highest Monthly Revenue: July 2024 (\$71,366.39)
- Lowest Monthly Revenue: December 2023 (\$3,769.52)
- Strong Performance Months: July, September 2024
- Average Monthly Revenue: ~\$53,076.89

Business Insight #3: The business shows strong growth from December 2023 to 2024, with peak performance in mid-2024. July and September demonstrate exceptional performance, suggesting possible seasonal trends.

4. Regional Revenue Distribution

Revenue Breakdown:

- South America: \$219,352.56 (31.79%)
 - Europe: \$166,254.63 (24.10%)
 - North America: \$152,313.40 (22.07%)
 - Asia: \$152,074.97 (22.04%)
- Total Revenue: \$690,995.56

Business Insight #4: While Asia has the lowest customer count, it maintains comparable revenue to North America, suggesting higher average purchase values per customer in the Asian market.

5. Customer Behavior Metrics

- Repeat Purchase Rate: 93.50%
- Average Order Value: \$690.00

Business Insight #5: The exceptionally high repeat purchase rate indicates strong customer loyalty and satisfaction. Combined with a significant average order value, this suggests effective customer retention strategies and premium product positioning.

Recommendations:

1. Regional Strategy:

- Investigate South American success factors for potential replication in other markets
- Focus on increasing customer base in Asia given the high revenue per customer ratio

2. Product Development:

- Expand the ActiveWear product line given its strong performance
- Consider bundling opportunities with the top-performing Smartwatch

3. Seasonal Planning:

- Plan inventory and marketing campaigns around July-September peak period
- Develop strategies to boost December sales, which show potential for improvement

4. Customer Retention:

- Document and maintain the successful loyalty programs driving the high repeat purchase rate
- Consider implementing premium tier programs given the high average order value

5. Growth Opportunities:

- Explore expansion of electronics category given the success of the Smartwatch

- Investigate cross-selling opportunities between ActiveWear and SoundWave brands