AMAZON PRODUCT & SALES ANALYSIS

Insights from the analysis

Web Traffic

- The average number of articles sold per purchase is 1.
- Business users, on average, take approximately 2 hours and 27 minutes between consecutive orders. This implies that it takes a business user about 2 hours to place another order after their previous one. In contrast, customer users have an average time of 1 minute between orders, indicating frequent and almost immediate order placements.

Promotion /Payment behavior

Amazon's most popular promotion is "IN Core Free Shipping." Customers highly value free shipping, as it significantly influences their purchasing decisions by allowing them to save money on their overall purchases. Transparent pricing without unexpected additional charges during the checkout process is also appreciated by customers, potentially reducing abandoned carts.

Promotion-related cancellations account for 5% of total sales, suggesting a low cancellation rate and overall customer satisfaction.
The average order value when a promotion is applied exceeds that of orders without promotions, indicating that promotions effectively encourage

customers to make purchases. This suggests evidence that customers are more likely to complete a purchase when a discount is applied.

Products

The top three categories by quantity sold are sets, kurtas, and western dresses, with tops following closely at 9,903 items sold.

The top-selling product by quantity is SKU number JNE3797 from the Western Dress category, with sizes L, M, and S being the most popular. However, it's important to note that while a specific product may sell more in a category, it doesn't directly correlate with the revenue generated in that category.

This is evident when looking at sales figures, where the Set category leads with $497,892.38, followed by Kurta with $270,504.24, and Western Dress with $142,444.12.

In terms of size and sales:

1. For the Set and Kurta categories, there are no sales for the size "Free," and sales for sizes 4XL, 5XL, and 6XL are not significant.
2. For Top and Western Dress categories, there are no sales for sizes: Free, 4XL, 5XL, and 6XL.
3. Categories such as Blouse, Bottom, Dupatta, Ethnic Dress, and Saree have not generated significant sales for sizes 3XL, 4XL, 5XL, 6XL, and Free.

Delivery

Amazon has managed the delivery of the majority of orders, totaling 84,087 orders delivered, representing 72% of the overall dispatched orders.

Similarly, most cancellations are associated with orders fulfilled by Amazon, totaling 5,657, whereas orders fulfilled by the seller account for a total of 2,132. When compared to the total orders dispatched by Amazon, cancellations constitute 6.73% of the total, while cancellations for orders fulfilled by the seller represent 6.54%.

Additionally, five orders sent via the seller's courier were lost, and there have been no instances of lost in transit orders for Amazon.

Surprisingly, the likelihood of customers purchasing more than one quantity is minimal, making up only 0.3% of all orders.

Business to business / Customer Lifetime Value (CLV)

The number of orders placed by B2B customers represents 0.72% of the total. As expected, nearly 99% of the total orders are attributed to individual customers.

Skewed Distribution: The distribution of B2B transaction amounts is right-skewed, indicating that most transaction amounts fall within the average range, while a few transactions involve very high amounts.

Frequently Occurring Transaction Amounts: The prevalent trend in transaction amounts is observed in the lower range, where the tallest bars are concentrated. This suggests that smaller transactions are more common among B2B customers.

High-Value Transactions: Conversely, there are relatively fewer instances of high-value transactions, as evidenced by the bars positioned towards the far right of the histogram and close to the x-axis. These occurrences may represent occasional large purchases or substantial orders from B2B clients.

Strategic Insights: From a strategic perspective, this pattern suggests a dual focus. Firstly, concentrating efforts on the most common transaction brackets could foster stable revenue streams. Secondly, cultivating relationships that lead to larger transactions is crucial, acknowledging the potential for substantial business growth through occasional high-value engagements.

Location/Customer Segmentation

The top three states in terms of sales are Maharashtra, Karnataka, and Telangana, with sales amounts of $169,361, $133,110, and $87,841, respectively.

Expressing the sales by state as a percentage yields the following:

- Maharashtra: 16%

- Karnataka: 13%

- Telangana: 8.80%

The leading cities in terms of sales are Bangalore, Hyderabad, and Mumbai.

The results show a strong positive correlation of 0.999, indicating a significant and positive relationship between the state where the sale occurs, and the quantity of sales generated. In simpler terms, almost all variability in one variable can be explained by the other variable, indicating a strong association between the state and the quantity of sales.

It's important to note that the interpretation of correlation does not imply causality. In other words, even though there is a strong correlation, we cannot conclude that the state directly causes the quantity of sales or vice versa. There may be other influencing factors or variables, such as age or income, that also contribute to this relationship.

Customer Segmentation

The top 5 states by sales in India are: Maharashtra, Karnataka, Telangana, and Tamil Nadu.

Average Order Value by Volume Segment

High Volume vs. Low Volume Segment:

- "No": Represents orders falling below the high-volume threshold.

- "Yes": Represents orders meeting or exceeding the high-volume threshold.

On average, orders categorized as "Yes" (high volume) exhibit a higher average order value compared to orders categorized as "No" (low volume).

The distinction between "No" and "Yes" suggests a potential positive correlation between order volume and average order value. In essence, as the volume of items in an order increases, the average order value tends to higher.

For businesses, this observation could signify an opportunity to promote higher-volume purchases or tailor marketing strategies for customers who consistently place larger orders.

Average Order Quantity by Value Segment

On average, there is not a significant difference in the average order quantity between orders categorized as "No" (low value) and "Yes" (high value).

The similarity in average order quantity between "No" and "Yes" implies that the value of items in an order may not have a significant impact on the average quantity of items ordered. The value of orders may be more influenced by the type or price of the products rather than the quantity.

For businesses, this observation may suggest that customers, regardless of the value of items in an order, tend to purchase a similar quantity of items on average.

Revenue

The month with the highest number of orders was April, totaling 44,206 items sold and generating total sales of $366,251.60. Sales experienced a decline in the months of May and June. The average number of items sold per order is 1, and the average order value falls between 3 and 7 dollars.

Analyzing the histogram of Distribution of transaction amount

The average transaction amount is between 3 and 9 dollars. Considering the average amount, this result is consistent. The average transaction amount

was $7.73. There are fewer transactions with amounts higher than $10 and a higher number of transactions with lower amounts. This distribution is right-skewed due to its longer right tail, possibly influenced by the type of product or category.

We can observe that the points are more concentrated in the center and then decrease to the right, this would support the observation that certain categories have higher transaction amounts, contributing to a right-skewed distribution of transaction amounts.

Distribution of Transaction Amount by segment "customer"

The result is a right-skewed distribution, and we can notice a decrease starting at $10 in the histogram this suggests that the majority of transactions have lower average amounts, with a few transactions having significantly higher average amounts.

Right-Skewed Distribution: the longer tail is on the right side, indicating that there are relatively few instances of high average transaction amounts. Most transactions cluster toward the lower end of the average transaction amount spectrum.

Decrease Starting at $10: the decrease starting at 10 could indicate a point where a substantial number of transactions have lower average amounts, and there are fewer transactions with higher amounts.

Conclusion: the distribution suggests that the majority of customers tend to have lower average transaction amounts, but there is a group of customers

with higher average amounts that contribute to the right-skewed nature of the distribution

<u>Correlation between the quantity sold per category and the total sales per category</u>

The correlation coefficient of 0.94 indicate a very strong positive relationship between the total quantity sold and the total sales amount for each category.

As the quantity of products sold in a category increases, there is a substantial increase in the total sales amount for that category.

A high positive correlation could be expected, especially if there are consistent pricing structures within each category and the majority of orders involve a single item.

Recommendations

1. **Leverage April's Success:** Given that April had the highest number of orders and significant sales, consider analyzing what contributed to this success. Implement strategies or promotions similar to those used in April to potentially boost sales in other months.

2. **Address Decline in May and June:** Investigate the reasons behind the decline in sales during May and June. It could be due to seasonal factors, changing customer preferences, or external factors. Adjust

marketing strategies or introduce promotions to counteract these trends and regain momentum.

3. **Optimize Average Order Value:** Since the average transaction amount falls between $3 and $9, explore ways to encourage customers to add more items to their orders. Bundle promotions, discounts for larger orders, or upselling techniques can be employed to increase the average order value.

4. **Target Lower Price Points:** Recognizing the right-skewed distribution with a concentration of transactions at lower amounts, consider introducing products or promotions at lower price points. This can attract a larger customer base and increase the overall volume of transactions.

5. **Category-Specific Strategies:** Given the observation that certain categories contribute to a right-skewed distribution of transaction amounts, focus on these high-value categories. Implement targeted marketing campaigns, special promotions, or product enhancements to further capitalize on the popularity of these categories.

6. **Evaluate Product Mix:** Assess the product mix and category assortment. Consider diversifying or expanding product offerings in categories that demonstrate higher transaction amounts. This can appeal to customer preferences and potentially drive more revenue.

It's evident that products such as Bottom, Saree, and Dupatta have lower sales, with Dupatta only selling three items. It is crucial to assess the cost-effectiveness of stocking these products.

I recommend a strategic reduction in inventory for specific categories and sizes to optimize resources:

- **Blouse:** Sizes 3XL, 4XL, 5XL, 6XL, and FREE

- **Bottom:** Sizes 3XL, 4XL, 5XL, 6XL, and FREE

- **Dupatta:** Sizes 3XL, 4XL, 5XL, 6XL, and FREE

- **Ethnic Dress:** Sizes 3XL, 4XL, 5XL, 6XL, and FREE

  Furthermore, for the category Saree, it is advisable to maintain inventory exclusively for the size "Free," as this size has shown sales success, totaling 1574$. This focused approach ensures that inventory aligns with customer preferences and market demand, contributing to better sales performance. Regularly reassess the product mix to adapt to evolving trends and customer preferences in the fashion market.

7. **Customer Segmentation:** Explore customer segmentation strategies, especially considering the variations in average order values and transaction amounts. Tailor marketing efforts based on customer behavior, preferences, and purchasing patterns to enhance customer engagement and loyalty.