

Insights, Key Findings & Business Recommendations

1. Key Findings

Based on the analysis conducted through interactive Power BI dashboards, several key findings were identified:

The analysis of the multi-platform e-commerce dataset through the developed Business Intelligence dashboards revealed several important insights related to sales performance, customer behavior, platform efficiency, and geographic demand.

- **Sales performance varies significantly across e-commerce platforms**, indicating unequal market penetration and customer engagement levels. This disparity suggests differences in platform reach, user trust, operational efficiency, and marketing effectiveness. Platforms with higher sales volumes also tend to show higher order frequencies, indicating stronger customer retention and engagement.
- **A limited number of product categories and products generate a disproportionate share of total revenue**. This finding indicates that business performance is heavily dependent on a narrow product portfolio, making product selection and inventory management critical success factors.
- **Customer ratings differ by platform**, suggesting variations in service quality, delivery performance, or customer experience, as reflected in differences in average ratings and review volumes. Platforms with higher average ratings generally achieve better sales performance, suggesting a positive relationship between customer satisfaction and revenue generation. Conversely, platforms with lower ratings may face challenges related to service quality, delivery reliability, or post-purchase support, which can negatively impact customer trust and repeat purchases.
- **Geographic analysis shows sales concentration in specific cities**, highlighting uneven regional demand. This uneven distribution suggests differences in market maturity, purchasing power, logistics infrastructure, or platform penetration across regions.
- **Monthly sales trends reveal seasonal patterns**, with peaks during specific periods of the year. These patterns demonstrate that sales performance is not static and must be managed dynamically through forecasting and adaptive planning.
- **Higher customer ratings tend to be associated with higher sales volumes**, indicating a positive relationship between customer satisfaction and revenue performance.

2. Why These Results Matter

These findings are critical for decision-makers because they transform raw transactional data into actionable insights:

- Understanding **platform performance differences** allows managers to prioritize partnerships and investments.
- Identifying **top-performing products and categories** supports better inventory planning and marketing focus.
- Insights into **customer satisfaction** help improve service quality and brand perception.
- **Geographic concentration of sales** enables targeted regional strategies instead of uniform nationwide approaches.
- Recognizing **seasonality patterns** improves forecasting, promotions, and supply chain planning.

3. Business Recommendations

Based on the insights prepared, the following business recommendations are proposed:

1. Focus investment on high-performing platforms

Allocate more marketing budget and exclusive product offerings to platforms with the highest sales and customer ratings.

2. Optimize product portfolio using top-performing categories

Prioritize inventory, promotions, and supplier negotiations for products and categories that consistently drive the highest revenue.

3. Improve customer experience on lower-rated platforms

Investigate causes of lower ratings (delivery time, product quality, after-sales service) and implement corrective actions.

4. Adopt city-specific marketing strategies

Launch targeted campaigns and localized promotions in high-sales cities while exploring growth opportunities in underperforming regions.

5. Leverage seasonal trends for promotions

Plan discounts, advertising, and inventory buildup around peak sales periods identified in the monthly trend analysis.

6. Use customer ratings as a performance KPI

Integrate customer satisfaction metrics into performance evaluation to align operational goals with customer expectations.

7. Standardize pricing strategies across platforms

Analyze pricing discrepancies to avoid customer confusion and maintain competitive positioning across marketplaces.

4. Limitations of the Analysis

Despite its value, the analysis has several limitations:

- The dataset represents a **limited historical period**, which may not capture long-term trends.
- The dataset lacks **customer demographic attributes** (age, gender, income), limiting deeper customer segmentation.
- External factors such as promotions, holidays, or competitor actions were not included.
- Ratings and reviews are treated quantitatively but do not capture qualitative customer feedback.

5. Future Improvements

To enhance the BI solution, future work could include:

1. Integrating **real-time or continuously updated data**
2. Adding **customer-level demographics** for advanced segmentation
3. Implementing **predictive analytics** for sales forecasting
4. Performing **sentiment analysis** on textual customer reviews
5. Expanding geographic granularity to regions or districts
6. Automating the ETL pipeline using scheduled data refreshes

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