

# E-Commerce Sales Analysis - Insights Summary

## 1. Project Overview :

This project examines an e-commerce firm's sales data for the period 2022-2023, which includes 5,000 transactions spread across various product categories, countries, and payment types. The data analysis was carried out in Excel for primary data exploration and Power BI for dynamic visualizations.

## 2. Key Metrics :

### Sales Performance:

- Total Revenue: \$4.17M
- Total Orders: 5,000
- Average Order Value: \$834.63

### Product Analysis:

- Top selling product: Tablet
- Highest revenue category: Electronics
- Product with highest growth: Smart Watch (43% YoY)

### Geographic Distribution:

- Top performing country: USA (42% of total sales)
- Region with highest average order value: Canada (\$948.02)

### Temporal Patterns:

- Best performing month: October (\$192,034.58)
- Sales peak during Q4 (Oct-Dec)
- Day of week with highest orders: Monday

### **3. Key Insights :**

1. **Electronics Dominance :** The Electronics category is far ahead of every other category, with Tablets, Smartphones, and Smart Watches being the key revenue generators. This category has the highest total sales as well as average order value.
2. **Regional Variations :** Although the USA is the largest market by volume (42% of sales), Canada and Japan have greater average order values, suggesting possibilities for focused premium product promotion in these markets.
3. **Seasonal Trends :** Sales exhibit high seasonality with a distinct peak in Q4, especially October. This indicates holiday shopping behavior that can be used to inform promotional planning.
4. **Payment Preferences :** Credit Card and PayPal account for roughly 65% of transactions, suggesting customer preference for payment using these tools and possible optimization opportunities.
5. **Price Point Success :** \$500-1000 price point products, especially in Electronics, demonstrate best performance and growth potential.

### **4. Business Recommendations :**

1. **Inventory Management :** Raise inventory levels of best-sellers (Tablet, Smartphones, Laptops, Smart Watches) by 15% for Q4 to address seasonal demand peaks.
2. **Marketing Emphasis :** Target high-value customers in Canada and Japan where average order values are over \$900. Rethink premium product bundles for these markets.
3. **Product Development :** Increase products in the Electronics category, especially in the \$500-1000 price segment where customer demand is highest.
4. **Seasonal Planning :** Plan promotions for October to take advantage of natural sales peaks. Plan holiday promotions early to lengthen the Q4 sales season.
5. **Payment Processing :** Streamline checkout experience for Credit Card and PayPal customers to minimize friction for most customers.

### **5. Next Steps :**

1. **Customer Segmentation Analysis :** Create RFM (Recency, Frequency, Monetary) analysis to segment high-value customers.
2. **Predictive Sales Forecasting :** Use time-series forecasting to forecast sales for the next 6-12 months.
3. **Competitive Analysis :** Benchmark product performance against industry standards to determine where growth can be achieved.
4. **Automated Reporting :** Create automated reporting pipeline for real-time monitoring of sales.
5. **A/B Testing :** Create experiments to experiment with promotional strategies for high-performing products.