

# E-commerce Sales Analysis

## 1. Sales & Revenue Analysis

Analyze revenue growth patterns and understand key revenue drivers using time-based and category-based breakdowns.

### 1.1 How much revenue generated throughout the time period?

**Purpose:** To understand the total business value in the given period.

**Insights:** Total Revenue Generated: \$49,205,331.99.

### 1.2 What is the total revenue generated per year?

**Purpose:** To analyze yearly revenue performance and identify growth trends.

**Insights:** Revenue steadily increased year over year, peaking in 2018 reaching to \$17,994,397.95.

### 1.3 How much revenue is generated according to month?

**Purpose:** To detect monthly revenue trends and seasonal patterns.

**Insights:** Highest Revenue generated in “May” (3.78M). Overall, peak month suggests that strong demand is observed in Q2 and Q3.

### 1.4 Which product categories generated the most revenue (Top 10)?

**Purpose:** To identify the most valuable product segments.

**Insights:** “Toys” category dominate with 22.6M in sales, followed by Furniture & Decor, Garden Tools, and Bed/Bath/Table. Product focus should be aligned with top-performing categories for better ROI.

### 1.5 What is the split between product price and shipping revenue?

**Purpose:** To analyze the revenue composition and contribution from shipping.

**Insights:** Majority of the revenue is driven by product sales (89%); shipping is a minor contributor(11%).

### 1.6 Which sellers generate the highest revenue (Top 10)?

**Purpose:** To spotlight top-performing sellers in the marketplace.

**Insights:** Top seller is “r7VxfoTVHbb” with 2.62M. Focusing on top sellers can enhance revenue partnerships and business strategies.

## 2. Customer Insights

Explore customer behavior, purchasing patterns, and geographic distribution to improve engagement and retention.

### 2.1 How many unique customers do we have?

**Purpose:** To measure the size of the customer base.

**Insights:** Total Customers: 127,595

### 2.2 How many customers are repeat vs. one-time buyers?

**Purpose:** To evaluate customer retention and loyalty.

**Insights:** 100% of the customers are One-Time Buyers.

### 2.3 What is the average spending per customer?

**Purpose:** To understand how much revenue each customer brings in on average.

**Insights:** Average Spend per Customer: \$385.64

### 2.4 Who are the top 10 highest-spending customers?

**Purpose:** To identify high-value customers for targeted marketing.

**Insights:** Most of the top spenders contributed over \$6.5K each in revenue.

### 2.5 Which city and state have the most unique customers?

**Purpose:** To determine where the majority of customers come from.

**Insights:** Top City is São Paulo with 20,512 customers and Top State is SP (São Paulo).

### 2.6 Which states generate the highest revenue?

**Purpose:** To evaluate revenue distribution by state.

**Insights:** Top revenue generated state is *São Paulo*: 20.7M, followed by *Rio de Janeiro*: 6.2M and *Minas Gerais*: 5.6M.

### 2.7 Which cities generate the highest revenue?

**Purpose:** To assess city-wise financial performance.

**Insights:** Top revenue generated city is *São Paulo*: 7.5M, followed by *Rio de Janeiro*: 3.4M and *Minas Gerais*: 1.35M.

### 3. Order & Delivery Performance

Evaluate delivery efficiency and order fulfillment metrics to uncover operational delays and performance gaps.

#### 3.1 How many total orders are there?

**Purpose:** To understand the order volume handled by the business.

**Insights:** Total Orders: 127,595

#### 3.2 What is the distribution of order status?

**Purpose:** To assess the lifecycle stage of all orders.

**Insights:** Majority of orders are **delivered** (87,428).

#### 3.3 What's the average delivery time vs estimated delivery time?

**Purpose:** To measure delivery performance against expectations.

**Insights:** Actual avg. Delivery Time is 12 days and Estimated avg. Time is 24 days, which means. Deliveries are happening faster than expected.

#### 3.4 What percentage of orders are delivered late?

**Purpose:** To evaluate reliability and punctuality in order fulfillment.

**Insights:** Late Deliveries are 7.71%, which means company should improve timely deliveries for higher customer satisfaction.

#### 3.5 Which product categories experience the most delivery delays?

**Purpose:** To identify logistics challenges by category.

**Insights:** Larger or seasonal items tend to be delayed more frequently like Christmas Supplies (47 Days), next Living Room Furniture with 25 days and Drinks with 21 days.

#### 3.6 Which sellers have the highest percentage of late deliveries?

**Purpose:** To identify underperforming sellers.

**Insights:** Multiple sellers have 100% late delivery rates, though with low order counts (1–2 orders), which indicates need for monitoring and stricter seller performance standards.

## 4. Product-Level Analysis

Drill down into product performance, inventory characteristics, and category trends to support business decisions.

### 4.1 How many total products are available?

**Purpose:** To understand the size of the product catalog.

**Insights:** Total Products: 32,781

### 4.2 How many distinct product categories exist?

**Purpose:** To evaluate product diversity.

**Insights:** Product Categories: 70

### 4.3 Which product categories have the highest number of listed products?

**Purpose:** To identify category depth and variety.

**Insights:** Toys dominate the catalog with 24,725 products, others are Bed Bath Table, Sports Leisure, Furniture Décor.

### 4.4 What are the top 10 most frequently sold products?

**Purpose:** To highlight high-demand products.

**Insights:** Highest sold item is “Product ID - 0vbEvli2JYJu” (Toys) with 563 sales. Most bestsellers come from Toys, Garden Tools, Computers, and Health Beauty categories.

### 4.5 What is the average shipping charge by product volume?

**Purpose:** To evaluate how volume affects shipping costs.

**Insights:** Larger items like Sports Leisure and Toys with high volume ( $>20,000 \text{ cm}^3$ ) incur shipping charges  $> \$400$ .

### 4.6 Which product categories have the highest average shipping charge?

**Purpose:** To discover which product types are costlier to ship.

**Insights:** Diapers & Hygiene have the highest avg. shipping charges (\$108).

## 5. Payment Insights

Understand customer preferences in payment methods and their impact on purchasing behavior and revenue.

### 5.1 What are the most used payment methods?

**Purpose:** To identify preferred payment channels.

**Insights:** Credit Card is the most common, used in 94,079 transactions.

### 5.2 What is the average number of installments by payment type?

**Purpose:** To understand customer behavior in spreading payments.

**Insights:** **Credit Card** users has avg. 3 installments, while other payment mode users has only 1 installments.

### 5.3 Do higher-value orders use more installments?

**Purpose:** To analyze if installment usage is driven by order value.

**Insights:** Surprisingly, single payments have a slightly higher average value (\$269.63) than installment-based ones (\$267.12) which means installment use is not strongly linked to high-value orders.

### 5.4 What is the distribution of payment types by order status?

**Purpose:** To assess payment method reliability and delivery correlation.

**Insights:** While credit cards are the most used method across all statuses, they also appear most frequently in canceled orders, purely due to their volume.

However, wallets and vouchers seem to have a relatively higher cancellation ratio compared to their delivered usage, hinting at potential issues in those payment flows.