

Amazon Sales Report

Prepared for: GDG Assiut University

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1. Executive Summary:

This report provides a **comprehensive analysis** of Amazon's sales performance, profitability, order distribution, and customer purchasing patterns. The analysis identifies key trends in **product demand, customer segments, shipping costs, and regional performance** to support strategic decision-making.

2. Data Cleaning and Preparation:

To ensure data accuracy and consistency, a comprehensive **data cleaning process** was performed on the three tables (**Area Managers, Invoices, and Returns**). The following steps were taken:

2.1 Area Managers Table

- **Removed empty rows** to ensure only valid data remains.
- **Set the first row as the header** to correctly label columns.

2.2 Invoices Table

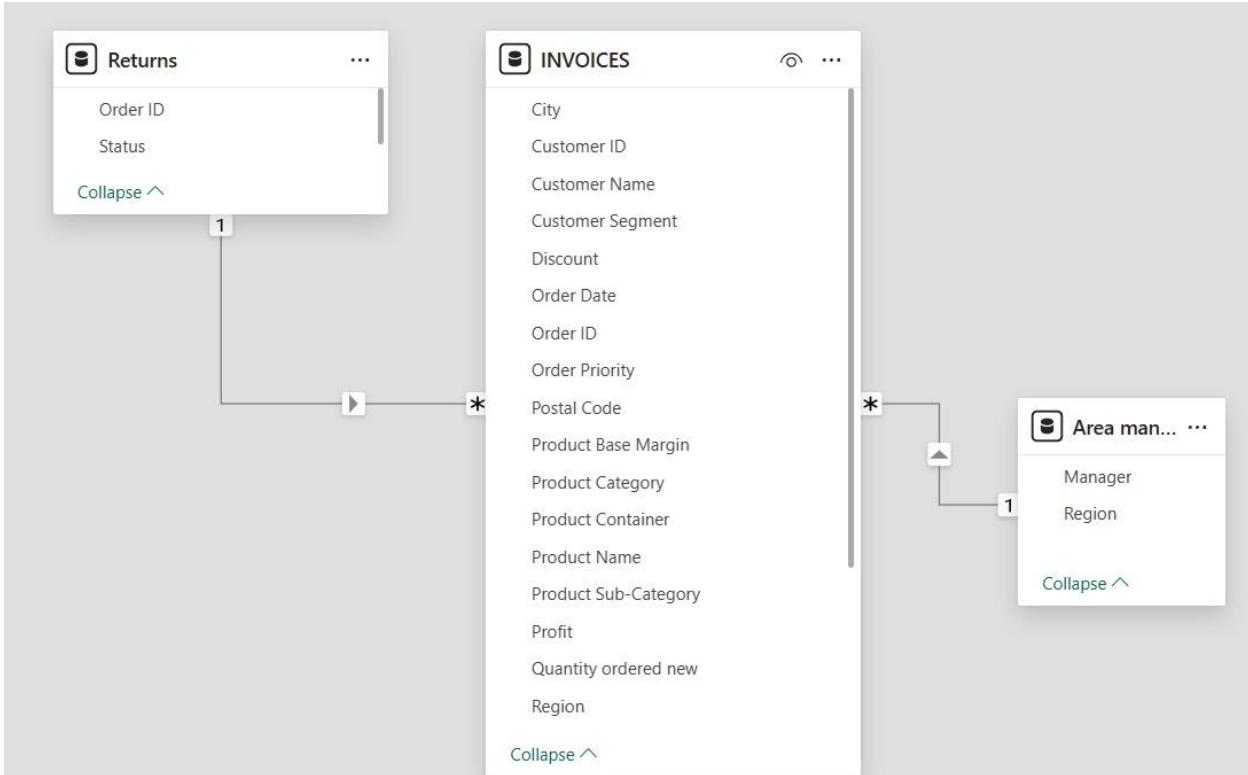
- **Removed the Row ID column**, as it was not needed for analysis.
- **Deleted empty rows** across the table to maintain data integrity.
- **Converted the data type of Ship Date and Order Date** to the appropriate DateTime format for accurate time-based analysis.
- **Dropped the Country column**, as it was not relevant to the scope of analysis.

2.3 Returns Table

- **Removed null rows** to ensure that only valid return data was included.

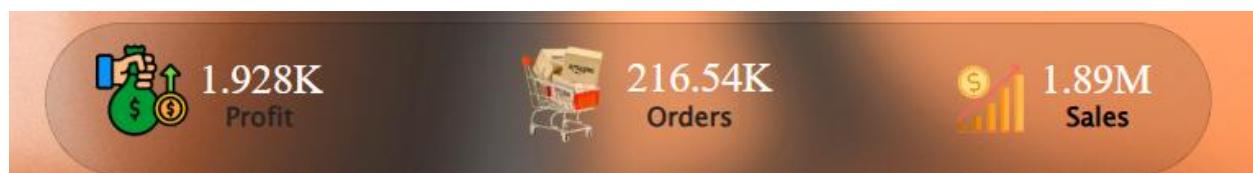
By applying these data cleaning steps, the dataset became more **structured, accurate, and ready for analysis**, ensuring reliable insights and decision-making.

3. Data Model View:



This data model establishes relationships between three tables: **Invoices**, **Returns**, and **Area Managers**. The **Returns** table links to **Invoices** via the **Order ID**, tracking returned orders, while the **Area Managers** table connects to **Invoices** through the **Region** field, associating managers with their respective sales regions.

4. Key Metrics Overview: “KPIs”:



- **Total Sales: \$1.89M**
- **Total Orders: 216.54K**
- **Total Profit: \$1.928K**
- **Total Customers: 1.118K**
- **Returned Products: 1.634K**
- **Total Products: 901**

5. Key Findings & Insights:



1. Product Base Margin by Month

Gross Margin per Product:

$$\text{Gross Margin} = \frac{\text{Revenue} - \text{Cost of Goods Sold (COGS)}}{\text{Revenue}} \times 100$$

What It Shows:

- A trend analysis of product profitability over six months.

Insights:

- January starts with a high margin, but it declines sharply in February.

- April shows the lowest margin, while June records a slight recovery.
 - Potential seasonal factors or pricing strategy changes could be influencing margins.
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2. Orders by Customer Segment

What It Shows:

- A bar chart showing **order distribution** across different customer segments (**Corporate, Home Office, Consumer, Small Business**).

Insights:

- **Corporate customers place the highest number of orders**, making them the most valuable segment.
- **Small businesses generate the lowest order volume**, representing an opportunity for growth.

Actionable Strategy:

- Enhance corporate partnerships with bulk discounts.
 - Target small businesses with customized promotions.
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3. Top 5 Product Sub-Categories

What It Shows:

- The **best-selling product sub-categories** in terms of sales, profit, and order count.

Insights:

- **Telephones & Accessories lead in sales**, followed by Binders and Computer Peripherals.
- **Paper and Pens & Art Supplies rank lower in demand**.

Actionable Strategy:

- Stock more **high-demand products** to meet customer needs.
 - Create bundle deals with low-selling categories to boost sales.
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4. Quantity Ordered by State (Geographical Analysis)

What It Shows:

- A **map visualization** of order distribution across different U.S. states.

🔍 Insights:

- Certain states **outperform others in order volume**, highlighting regional demand differences.

Actionable Strategy:

- **Expand marketing efforts** in underperforming states.
- **Improve regional warehouse distribution** for faster shipping.

6.Orders Dashboard:



1. Orders by Product Category 'Donut Chart':

📊 What It Shows:

- Order distribution across **Furniture, Office Supplies, and Technology**.

🔍 Insights:

- **Office Supplies have the highest order count**

Actionable Strategy:

- **Optimize inventory** by prioritizing high-demand, low-return items.

2. Quantity of Orders by Region and Priority

What It Shows:

- Orders categorized by **region and priority level** (Critical, High, Medium, Low, Not Specified).

Insights:

- **Critical orders need better fulfillment efficiency** to maintain customer trust.

Actionable Strategy:

- **Improve logistics** for high-priority orders.
- **Optimize regional warehouses** based on demand.

3.Orders by Month (Line Chart):

What It Shows:

- Monthly trend of total orders, highlighting seasonal demand shifts.

Insights:

- Orders peak in January but decline between February and May.
- A slight increase in June suggests possible promotional effects.

Actionable Strategy:

- Launch targeted promotions during low-order months.
 - Adjust inventory and staffing based on demand trends
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7. Product Performance Dashboard:



What It Shows:

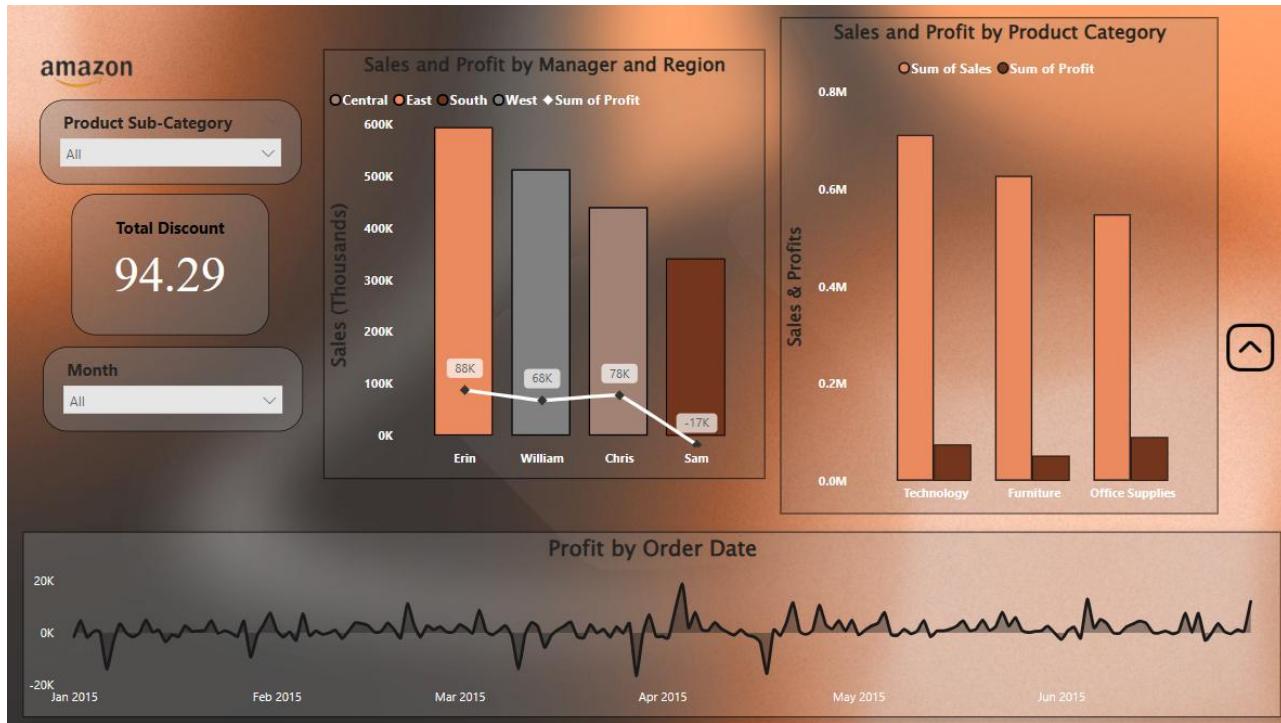
- Overview of product sales, shipping costs, and return trends.

Insights:

- Fellowes PB500 E is the top-selling product, followed by Lexmark 4227 and Global Troy™.
- Small Boxes and Wrap Bags are the most used product containers.
- Delivery Trucks incur the highest shipping costs, followed by Regular Air.
- 1.634K returned products indicate potential quality or customer satisfaction issues.
- Most orders are delivered within 2 days, indicating an efficient fulfillment process.

Actionable Strategy:

- Prioritize inventory for high-demand products while monitoring return rates.
- Optimize packaging efficiency by promoting cost-effective product containers.
- Evaluate shipping methods to reduce costs, especially for Delivery Truck shipments.



8. Sales & Profit Dashboard:

What It Shows:

- Sales and profit distribution by manager and region.
- Sales and profit by product category.
- Profit trend over time shows fluctuations and potential losses.

Insights:

- Erin leads in total sales (~600K) but has moderate profit (~88K).
- Chris and William have similar performances, with sales between 300K-500K and profits around 68K-78K.
- Sam has a negative profit (-17K), indicating losses despite sales.
- Sales are distributed across Central, East, South, and West regions.

Actionable Strategies:

- Investigate why Sam is making a loss—possible high discounting or high returns?
- Focus on high-profit managers like Erin to identify best practices.
- Adjust regional pricing and discounts based on performance.

1. Sales & Profit by Product Category (Grouped Bar Chart)

Insights:

- Technology generates the highest sales (~800K) but has very low profits.
- Furniture and Office Supplies follow, both with sales between 600K-700K but also low profit margins.
- The low profit margins suggest high costs or aggressive discounts.

Actionable Strategies:

- Reevaluate pricing and cost structure in the Technology category.
- Increase profit margins by reducing excessive discounts or optimizing supplier costs.
- Analyze refund rates—high returns could be impacting profits.

2. Profit Trend Over Time (Line Chart)

Insights:

- Profits fluctuate frequently, with multiple dips in negative profit (losses).
- There are certain months with stable or increasing profits, indicating seasonal trends.

Actionable Strategies:

- Identify low-profit months and adjust marketing/spending accordingly.
- Launch targeted promotions during stable periods to maximize profit.
- Address loss-making periods by analyzing expenses, returns, and pricing.

Strategic Recommendations

Revenue Growth & Customer Retention

- Strengthen loyalty programs and offer bulk order incentives for corporate customers.

Product & Inventory Optimization

- Focus on high-demand categories (Telephones, Binders, Computer Peripherals).
- Implement bundled offers to drive cross-selling.

Shipping & Logistics Efficiency

- Shift to cost-effective shipping modes and optimize packaging sizes.

Market Expansion

- Increase marketing in low-performing regions.

- Establish regional warehouses to speed up deliveries.

❖ **Pricing & Discount Strategy**

- Reduce unnecessary discounts to improve profit margins.
- Implement dynamic pricing models based on demand trends.

