



Amazon

Sales Data Analysis

“Amazon is one of the leading E-commerce platforms where users can buy millions of products from many categories.”

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Problem Statement:

Sales management has gained importance to meet increasing competition and the need for improved methods of distribution to reduce costs and to increase profits.

Sales management today is the most important function in a commercial and business enterprise.

Objectives:

1. To calculate total sales, total profit, average unit price, total units sold, total cost, total revenue
2. To find which item types are top sellers
3. To identify the top 10 customers as per sales
4. To find the number of customers in each region
5. To find the trend of sales, year-wise, month-wise, yearly-month-wise
6. To find total sales and total profit by region

The Process

- Data Collecting
- Data Cleaning
- Data Analysis
- Insights
- Summary

DATA COLLECTING

- Data collected in CSV Files in the name of **Amazon Sales Data.csv**
- The CSV file has a dataset of Amazon from **2010 to 2017 sales data**
- There are **100 rows** and **14 columns**

Amazon Sales Data Description:

- **Region:** It describes the geographic location where sales occurred.
- **Country:** It describes the country of that geographic location.
- **Item type:** This shows the variety of item categories.
- **Sales Channel:** It indicates the medium or platform through which sales transactions are conducted.
- **Order priority:** It indicates the urgency level assigned to fulfilling an order, such as high, medium, low, or critical.
- **Order Date:** It shows the date the order was placed.
- **Order Id:** A unique identifier is assigned to each sales transaction, ensuring each order can be distinctly tracked and referenced.
- **Ship date:** It indicates the date the order was shipped to the customer.
- **Units Sold:** It signifies the quantity of items sold per transaction.
- **Unit Price:** It Indicates the price of each item in the specified item type per unit
- **Unit Cost:** The amount it costs Amazon to get or make each item.
- **Total Revenue:** The total amount of money earned from sales before any expenses are deducted.
- **Total Cost:** The overall expense incurred by Amazon, encompassing all costs associated with acquiring, producing, and delivering products sold, including operational expenses.
- **Total Profit:** The amount earned from selling an item after subtracting all expenses associated with acquiring, producing, and delivering it

Data Cleaning

- There are no **null values** nor **duplicates** present in the dataset
- Some values in the '**Order Date**' and '**Ship Date**' columns are in **String datatype**. So we converted them to **datetime datatype** using **Python**

DATA ANALYSIS



IMPORTANT KPIs

- **Total Sales Revenue**
- **Total Profit**
- **Sales Trends – Year-wise, Month-wise, Yearly-month wise**
- **Total Units Sold**
- **Total Units Cost**
- **Total Costs**
- **Region Wise Profit**
- **Top Item Type**
- **Top 10 Customers**
- **Customer Distribution across different regions**
- **Top 5 Countries**
- **Year Wise Sales**



Sales Data Analysis

Total Revenue
137.35M

Total Profit
44.17M

Total Sales
137.35M

Total Cost
93.18M

Total Country
76

Total Region
7

Total Units Sold
513K

Total Item Type
12

Year
☐ Select all
☐ 2010
☐ 2011

Order Pr...
☐ Select all
☐ Critical
☐ High

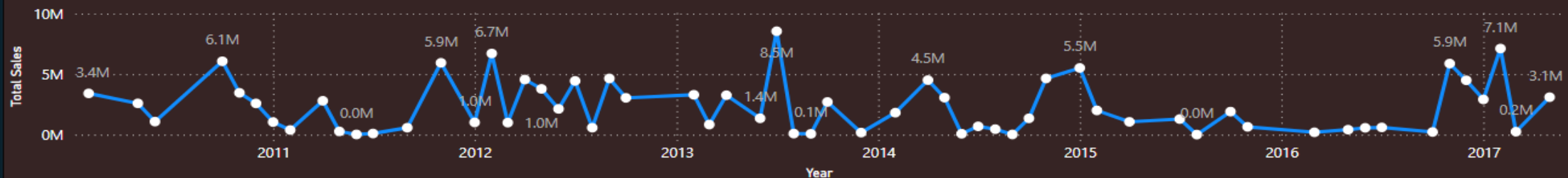
Region
☐ Select all
☐ Asia
☐ Australia and Oceania

Country
☐ Select all
☐ Albania
☐ Angola

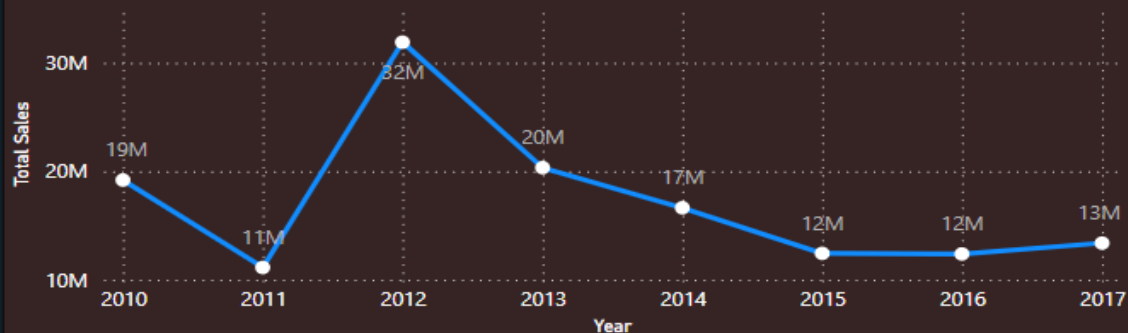
Sales C...
☐ Select all
☐ Offline
☐ Online

Item Type
☐ Select all
☐ Baby Food
☐ Beverages

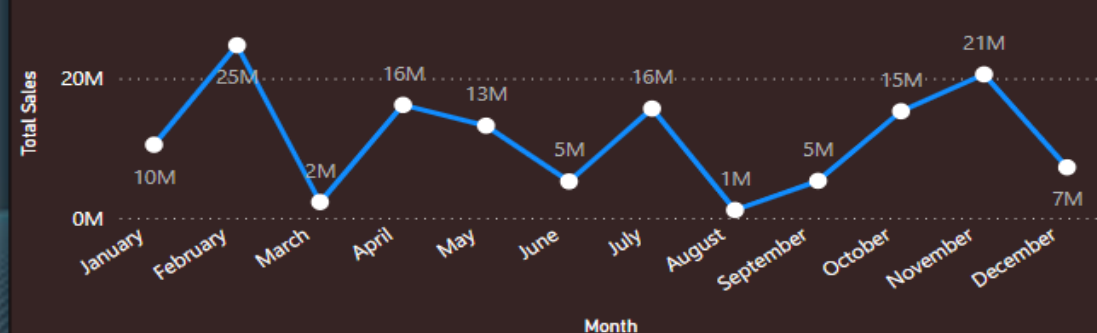
Sales Trend by Year-Month Wise



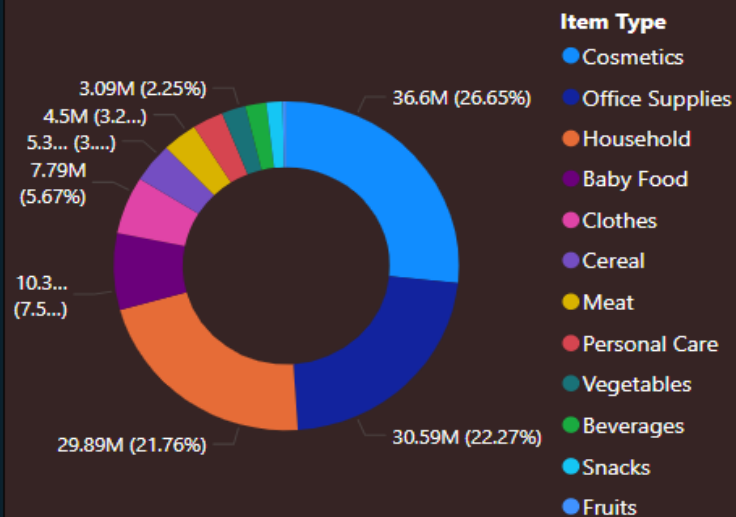
Sales Trends by Year



Sales Trends by Month



Total Sales by Item Type



Total Revenue by Countries

Country	Total Revenue
Albania	2,47,956.32
Angola	27,98,046.49
Australia	24,89,933.49
Austria	12,44,708.40
Azerbaijan	44,78,800.21
Bangladesh	9,02,980.64
Belize	6,00,821.44
Brunei	43,68,316.68
Bulgaria	27,79,199.71
Burkina Faso	12,45,112.92
Cameroon	38,51,030.28
Cape Verde	4,55,479.04
Comoros	1,97,883.40
Costa Rica	5,23,807.57

Region

- ☐ Select all
- ☐ Asia
- ☐ Australia and Oceania

Country

- ☐ Select all
- ☐ Albania
- ☐ Angola

Item Type

- ☐ Select all
- ☐ Baby Food
- ☐ Beverages

Order Priority

- ☐ Select all
- ☐ Critical
- ☐ High

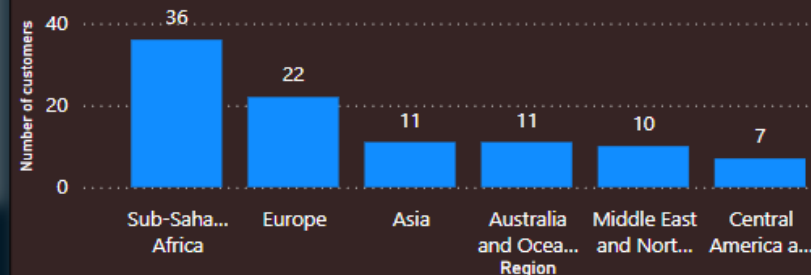
Year

- ☐ Select all
- ☐ 2010
- ☐ 2011

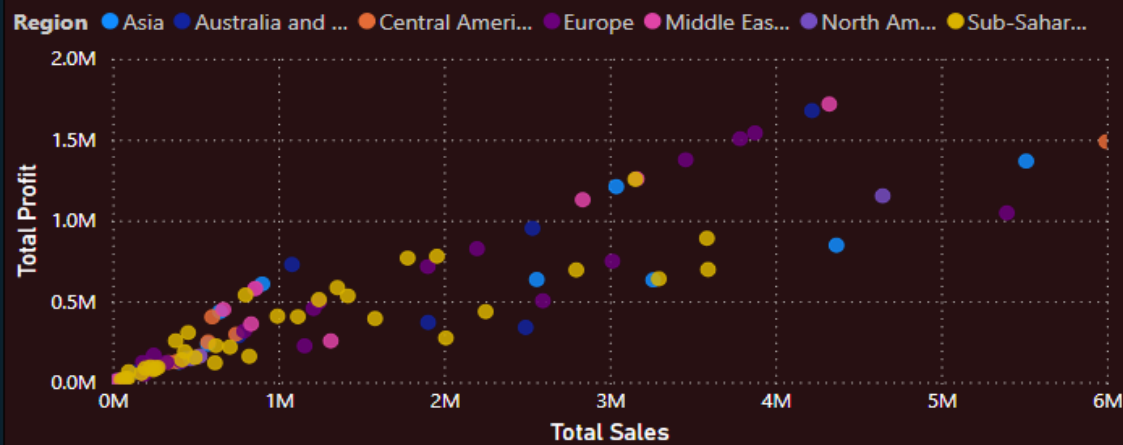
Sales Channel

- ☐ Select all
- ☐ Offline
- ☐ Online

Number of customers by Region



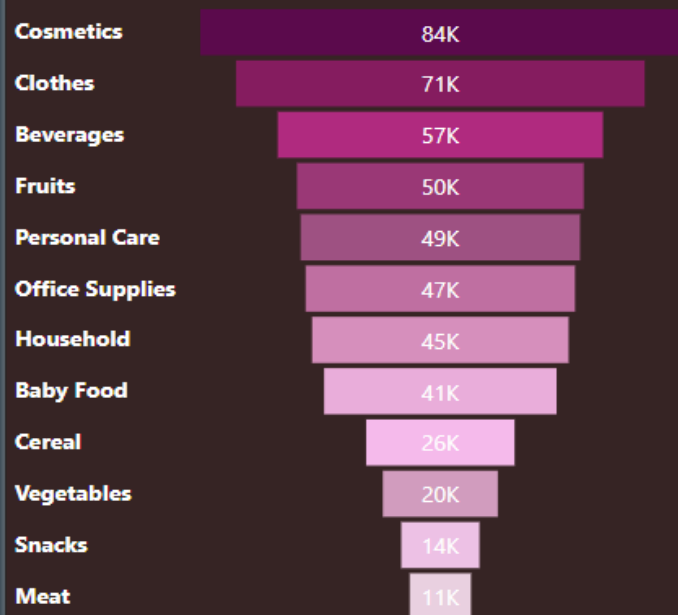
Total Sales and Total Profit by Region



Total Profit by Region and Sales Channel

Sub-Saharan Africa		Asia		Australia and Oceania	
Offline 7.77M		Online 4.41M		Online 2.84M	
Europe		Offline 3.58M		Offline 1.89M	
Offline 5.57M		Online 5.51M		Online 2.48M	
Middle East and North Africa		Offline 2.48M		North America	
Online 3.59M		Offline 2.48M			

Units Sold by Item Type



Max Delivery Days by Item Type



Region

- ☐ Select all
- ☐ Asia
- ☐ Australia and Oceania
- ☐ Central America and the Caribbean
- ☐ Europe
- ☐ Middle East and North Africa

Country

- ☐ Select all
- ☐ Albania
- ☐ Angola
- ☐ Australia
- ☐ Austria
- ☐ Azerbaijan
- ☐ Bangladesh
- ☐ Belize
- ☐ Brunei
- ☐ Bulgaria

Order Priority

- ☐ Select all
- ☐ Critical
- ☐ High

Sal.

- ☐ Select all
- ☐ Offline
- ☐ Online

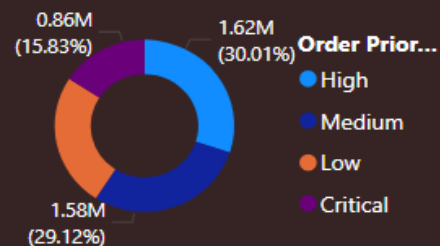
Item Ty...

- ☐ Select all
- ☐ Baby Food
- ☐ Beverages
- ☐ Cereal
- ☐ Clothes

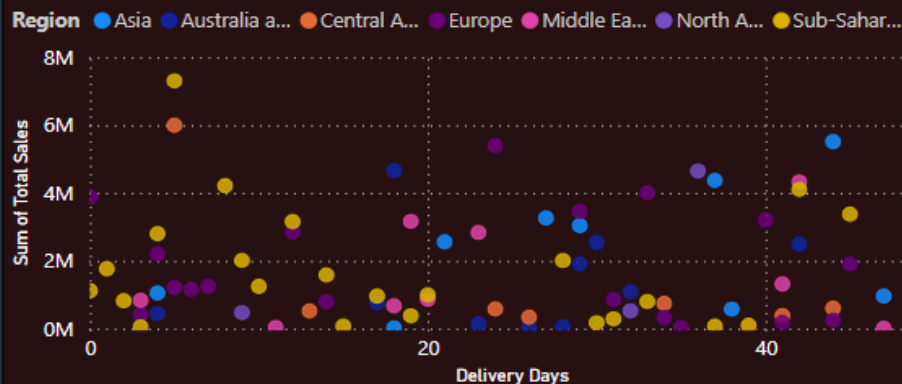
Year

- ☐ Select all
- ☐ 2010
- ☐ 2011
- ☐ 2012
- ☐ 2013

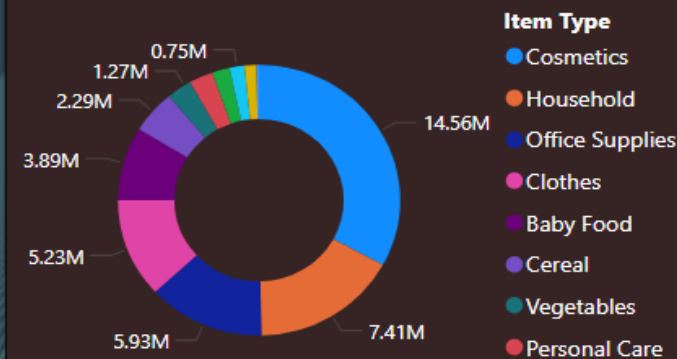
Total Revenue by Order Priority



Total Sales by Region and Delivery Days



Total Profit by Item Type



Insights

- The **Total sales** are **137.35 million** out of which the **total profit** is **44.17 million**
- Amazon Sales spread in **76 Countries** and **7 Regions**
- There are a total of **12 Item Types** sold on Amazon as per the dataset
- Total Units Sold: **512871**
- Total Unit Costs: **19104.8**
- Total Cost is **93.18 million**
- **The High Order Priority** has the highest sales i.e. **1.62M**, which means people want their product to be delivered fast.
- **Cosmetics** have the highest number of units sold among all the Item Type
- Majority of people still prefer **“Offline Channel”** for buying products
- Sub-Saharan Africa has the highest sales as has the maximum number of customers
- **Year 2012** saw the highest Sales

Summary

- “Asia”, “Central America and The Caribbean”, “Europe”, and “Sub-Saharan Africa” have generated more profit in **offline mode** whereas “Australia and Oceania”, “The Middle East and North Africa” had more profit in **online mode**.
- **North America** has only an **offline** option. One of the possible reasons could be higher costs or logistical challenges associated with online delivery.
- **From 2010 to 2017**, amazon sales showed only a **positive trend**. It could be due to its expanded product range, improved customer experience, technological advancements, and increased online shopping adoption.
- **Cosmetics** are top sellers among all item types which is **36.6 million** and generated **a total profit of \$14.56 M**. So it is advisable to conduct some online marketing campaigns to promote Cosmetic products.

Summary

Index	Order ID	Total Sales	Region	Country
47	522840487	5997054.98	Central America and the Caribbean	Honduras
9	177713572	5513227.50	Asia	Myanmar
7	166460740	5396577.27	Europe	Lithuania
98	986435210	4647149.58	North America	Mexico
22	320009267	4368316.68	Asia	Brunei
17	231145322	4324782.40	Middle East and North Africa	Pakistan
62	670854651	4220728.80	Australia and Oceania	Samoa
24	331438481	3876652.40	Europe	Iceland
19	249693334	3786589.20	Europe	Switzerland
8	177636754	3593376.78	Sub-Saharan Africa	Cameroon

- These are the **Top 10 Customers** from different regions. It indicates that they are loyal customers, for retaining them, we can provide them with some offers or give them some gift hampers.

Summary

- Sub-Saharan Africa and Europe have the highest number of customers i.e. 36 & 22 whereas North America has the lowest number of customers i.e. 3. It indicates that Amazon has a strong market presence in Sub-Saharan Africa and Europe and a weak presence in North America, It is advisable to Enhance customer service and support to maintain customer satisfaction in a strong market and Conduct market research to understand the needs and preferences of North American customers.
- The Region Sub-Saharan Africa has generated the highest profit where people bought Fruits the most, with approx. 31 thousand units sold. Highlight the health benefits of fruits during campaigns and align marketing with local preferences.
- The second most purchased item, after Cosmetics in Europe is Baby Food. This insight tells us that the majority of people in Europe are newlywed couples. Thus you can promote products related to newborn babies to these people.

Summary

- **Cosmetics** and **Snacks** have taken a **minimum of 0 days** to deliver i.e. on same-day delivery but **Meat** and **vegetables** took a **minimum of 9 to 10 days** to deliver. It is advisable to do a supply chain analysis and improve logistics as it may negatively impact customer satisfaction, especially for perishable goods where freshness is crucial.
- The **North American region** has generated the **least profit by selling only Personal Care and Household Items** through the Offline Channel. Try to promote products other than both these item types through Online Channel by giving some discounts. Do some surveys to find local people's preferences.
- **Meat** is the least sold item type with **11 thousand units sold** in **Australia and Oceania** and **Sub-Saharan Africa Region** using only **Online Channel**. Consider selling different kinds of meat products and adjust the prices.

Summary

- **Fruits** have generated the **least profit** of all item types which is **only \$120.50 thousand**. It is advisable to understand the customer needs, adjust the price, and analyze the local preferences.
- **Household Items** and **Cosmetic Products** are sold the most through **Offline and Online Channels** respectively. Enhance physical stores with attractive displays and promotions for Household Items. Run targeted ads and make the website more user-friendly for Cosmetic products.

Thank You