# Amazon Sales Data

* *Problem Statement: -*

Sales management has gained importance to meet increasing competition and the

need for improved methods of distribution to reduce costs and increase profits. Sales

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

enterprise.

ETL: Extract-Transform-Load some Amazon datasets and find them for me

Sales-trend 🡪 month-wise, year-wise, yearly\_month-wise

Find key metrics and factors and show the meaningful relationships between

attributes. Do your research and come up with your findings.

* *Technical Tool: -*

Python: Jupyter Notebook

Libraries: Pandas, matplotlib, seaborn, numpy.

The provided code seems like a detailed exploratory data analysis (EDA) for an Amazon sales dataset. Here's a breakdown of the key findings and visualizations:

* *Overview: -*

The dataset contains 100 entries with 14 columns, encompassing sales data from various regions, countries, item types, and sales channels over several years.

* *Key Findings: -*

1. **Regions and Countries: -**

* Total Regions: 7
* Total Countries: 76
* Region-wise Distribution:
  1. Sub-Saharan Africa and Europe lead in sales volume.
  2. North America has sales solely through offline channels.

1. **Items: -**

* Total Item Types: 12
* Top Selling Items: Cosmetics, Office Supplies, Household items.
* Least Selling Items: Fruits, Snacks, Vegetables, Beverages.

1. **Sales Channels: -**
   * Offline Sales: Higher total revenue (58.14%) and cost.
     + - Online Sales: Lower total revenue (41.86%), indicating a potential area for growth through promotions and advertising.
2. **Revenue and Profit: -**
   * **Total Units Sold**: 512,871
   * **Total Unit Cost**: 19,104.8
   * **Total Revenue**: 137,348,768.31
   * **Total Cost**: 93,180,569.91
   * **Total Profit**: 44,168,198.40
3. **Region-Wise Performance: -**
   * **Highest Average Profit**: Middle East and North Africa (17.48% of total average profit).
   * **Lowest Average Profit**: Sub-Saharan Africa (10.27% of total average profit).
   * **High Sales Volume**: Sub-Saharan Africa and Europe.
   * **Moderate Sales Volume**: Australia and Oceania, Asia, Middle East and North Africa**.**
   * **Low Sales Volume**: Central America and the Caribbean, North America.

Visualizations

* + **Yearly Average Sales**: A bar chart showing the average revenue per year.
  + **Total Revenue by Product Type**: A bar chart highlighting the revenue generated by each item type.
  + **Sales Channel Revenue**: A pie chart illustrating the percentage contribution of offline and online sales to the total revenue.
  + **Total Cost by Sales Channel**: A pie chart depicting the cost distribution between offline and online sales.
  + **Region-Wise Average Profit**: A pie chart showing the average profit distribution across regions.
  + **Units Sold Region-Wise**: A donut chart representing the percentage of units sold in each region.
  + **Units Sold Yearly**: A bar chart indicating the total units sold each year.

EDA (Exploratory Data Analysis)

* *Data Cleaning and Preprocessing: -*
  + There are no missing values in the dataset.
  + New columns, “Year” and “Month” were created from the "Order Date" column.
* *Analysis of Sales: -*
  + Total revenue: $137,348,768.31
  + Total cost: $93,180,569.91
  + Total profit: $44,168,198.39
  + "Offline" and "Online" are the two sales channels.
  + "Cosmetics" is the product category with the highest total revenue.
  + Sub-Saharan Africa has the highest volume of units sold, while North America has the lowest.
  + Yearly sales show fluctuations with peaks in 2012 and 2014 and a low point in 2016.
  + **October and November** consistently exhibit high sales, likely driven by holiday shopping.
  + **February 2017 and November 2016** show exceptionally high sales, suggesting the presence of successful promotions or events.
  + **June, July, August, and September** typically experience lower sales, which may be attributed to seasonal trends or customer behaviors.
* *Strategies: -*
* **Shift focus to online sales:** Capitalize on the online sales channel's growth potential. Implement targeted advertising campaigns and promotions to attract customers to the online platform.
* **Optimize product strategies:** Analyze low-performing categories like "fruits," "vegetables," and "beverages." Consider offering discounts or exploring fresh produce delivery initiatives to boost sales in these areas.
* **Expand into emerging markets:** The Middle East and North Africa show promise for high profits. Invest in marketing and logistics infrastructure to tap into these markets' potential.
* **Revitalize sales in specific regions:** Central America the Caribbean and North America have room for improvement in sales volume. Develop targeted campaigns to address these regions' unique consumer preferences.
* **Maintain sales consistency:** Implement strategies to stabilize and increase sales volumes year-over-year. This will ensure steady business growth and minimize fluctuations.
* **Seasonal Promotions**: Utilize the yearly and monthly sales data to run seasonal promotions and stock management efficiently.
* **Leverage High Sales Periods:**
  + Intensify marketing efforts and promotions during October and November to capitalize on holiday shopping trends.
  + Plan special events or campaigns in February to replicate the success seen in February 2017.
* **Boost Low Sales Months:**
  + Introduce targeted promotions and discounts during the typically slow months of June to September to stimulate demand.
  + Consider launching new products or services in these months to attract customer attention.

Overall, this EDA provides valuable insights into Amazon's sales performance. By addressing the identified areas for improvement, Amazon can optimize its sales strategies and increase profitability.