

# ELECTRONIC SALES ANALYSIS REPORT

Sales Insights and Interactive Dashboard (2023–2024)

Data Analysis Project

Powered by Excel (Power Query, Pivot Tables & Dashboard)

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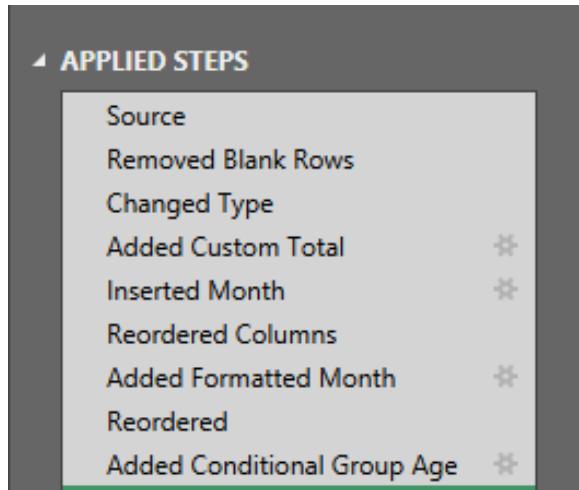


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**Electronic Sales Analysis** – This project focused on analyzing a Kaggle dataset of electronic sales (20,000 rows, 2023–2024) to build a structured sales report and deliver actionable insights. The main objective was to demonstrate how common business questions in sales can be answered through data preparation and visualization. Using Excel with Power Query, pivot tables, and pivot charts, the dataset was cleaned, transformed, and enriched with calculated fields such as total\_calculated, month, and group\_age.

The analysis addressed key questions including sales distribution per age group, most used payment methods, and product preferences by gender. The final deliverables included a professional dashboard with interactive slicers and charts, as well as a written report summarizing the findings. Insights revealed patterns such as sales peaking in August before dropping by 70.52% in December, no product rating exceeding 3.5 (suggesting room for quality or service improvements), and Phones clearly leading sales with 37k units sold.

## Data Preparation (Power Query)



Applied Steps in Power Query showing the cleaning and transformation process.

The dataset was cleaned and transformed in Power Query prior to analysis. Key actions included:

- Removing blank rows and standardizing column data types.
- Creating calculated fields:

Total\_Calculated for total sales.

Month converted into a standardized format for consistency.

Group\_Age derived from customer age ranges.

- Reordering columns for clarity and removing unnecessary fields.

These transformations ensured a clean, structured dataset, ready to be used in pivot tables and the dashboard.

Purchase Date	Month	Add-ons Purchased	Add-on Total	GroupAge	Total Calculated
20/03/2024	March	Accessory,Accessory,Accessory	40.21	Older than 50	7160.92
20/04/2024	April	Impulse Item	26.09	Older than 50	767.18
17/10/2023	October		null	0 35-50	2319.8
09/08/2024	August	Impulse Item,Impulse Item	60.16	35-50	4016.11
21/05/2024	May	Accessory	35.56	Older than 50	97.81
26/05/2024	May	Impulse Item,Accessory	65.78	35-50	148.78
30/01/2024	January		null	0 25-35	7603.47
24/06/2024	June	Extended Warranty,Extended Warranty	75.33	25-35	4250.97
03/10/2023	October	Impulse Item	43.05	Less than 25	7163.76
01/01/2024	January		null	0 Less than 25	5103.56
25/06/2024	June	Impulse Item,Accessory,Impulse Item	90.38	Less than 25	2560.68
07/11/2023	November	Accessory,Extended Warranty	55.48	25-35	8758.57
25/09/2023	September	Extended Warranty,Impulse Item,Extended Warranty	65.85	Older than 50	3445.17
07/07/2024	July	Accessory,Accessory,Accessory	70.17	Older than 50	9564.45
18/03/2024	March	Accessory,Impulse Item,Accessory	57.81	35-50	5596.14
02/01/2024	January	Extended Warranty,Extended Warranty	69.31	Older than 50	5138.29
18/05/2024	May	Accessory	8.3	Older than 50	4755.44
02/09/2024	September	Accessory,Accessory,Accessory	80	Less than 25	183.75
07/07/2024	July		null	0 Older than 50	124.5
23/07/2024	July	Impulse Item,Extended Warranty	70.39	25-35	236.39
14/03/2024	March		null	0 35-50	103.75
20/04/2024	April	Impulse Item,Impulse Item	37.87	35-50	1025.99
21/07/2024	July	Accessory	49.17	35-50	894
02/12/2023	December	Impulse Item,Accessory,Extended Warranty	37.13	Older than 50	3416.45
20/03/2024	March	Accessory,Extended Warranty	49.54	Older than 50	894.37

*Sample of the transformed dataset, ready for pivot table analysis.*

To summarize monthly sales, a pivot table was created with the following setup:

Rows: Month

Values: Total\_Calculated (sum)

Filters / Columns: None (simple aggregation)

This pivot table served as the basis for the monthly sales chart and helped identify key trends

The screenshot shows the 'PivotTable Fields' pane from Microsoft Power BI. On the left, under 'Choose fields to add to report:', there is a search bar and a gear icon. Below it is a list of fields: Customer ID, Age, Gender, Loyalty Member, Product Type, Rating, Payment Method, Total Price, Unit Price, Quantity, Purchase Date, Month, and Total Calculated. The 'Month' and 'Total Calculated' fields are checked with green checkmarks. In the center, there are sections for 'Filters', 'Columns', 'Rows', and 'Values'. The 'Rows' section contains the 'Month' field. The 'Values' section contains the formula 'Sum of Total Calculated...'. The right side of the pane has a large, empty gray area labeled 'Drag fields between areas below:'.

## Visualization Process

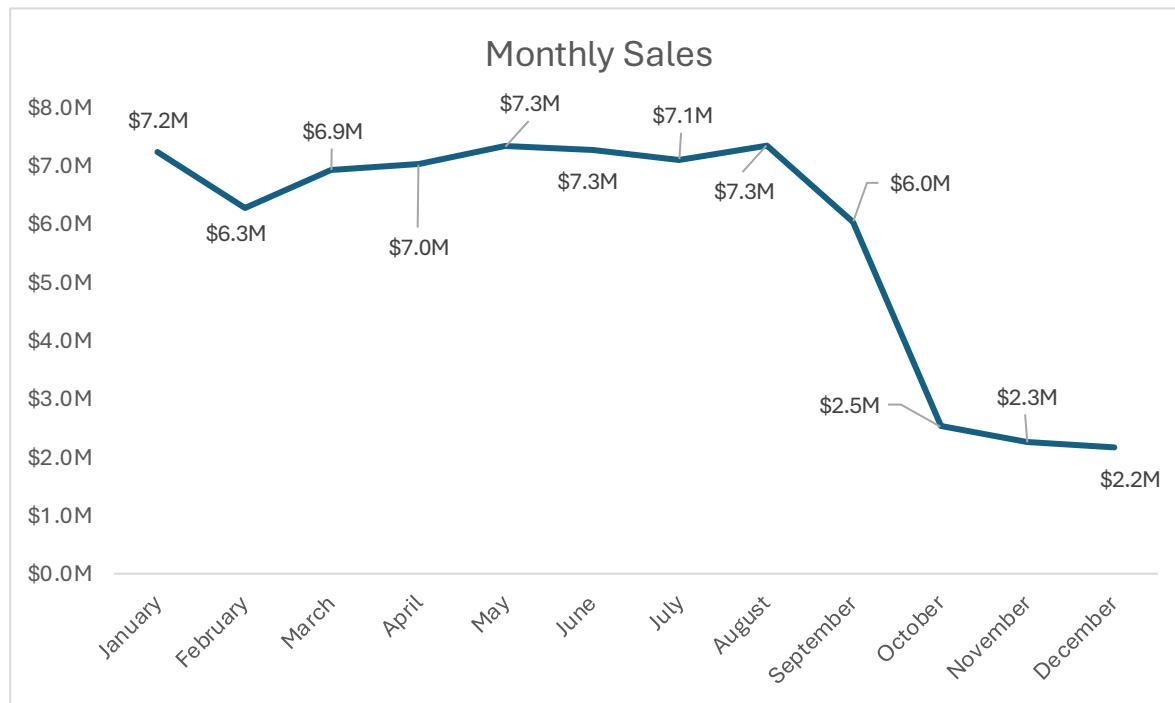
To better understand the sales performance, several business questions were explored. The following sections present three representative questions, along with their visualizations and insights.

Each chart was generated from its corresponding pivot table, following a consistent workflow:

- 1-Pivot table creation from cleaned data.
- 2-Selection of relevant fields for rows, columns, and values.
- 3-Pivot chart creation to visualize trends and comparisons.
- 4-Final formatting and placement in the dashboard for clarity and interactivity.

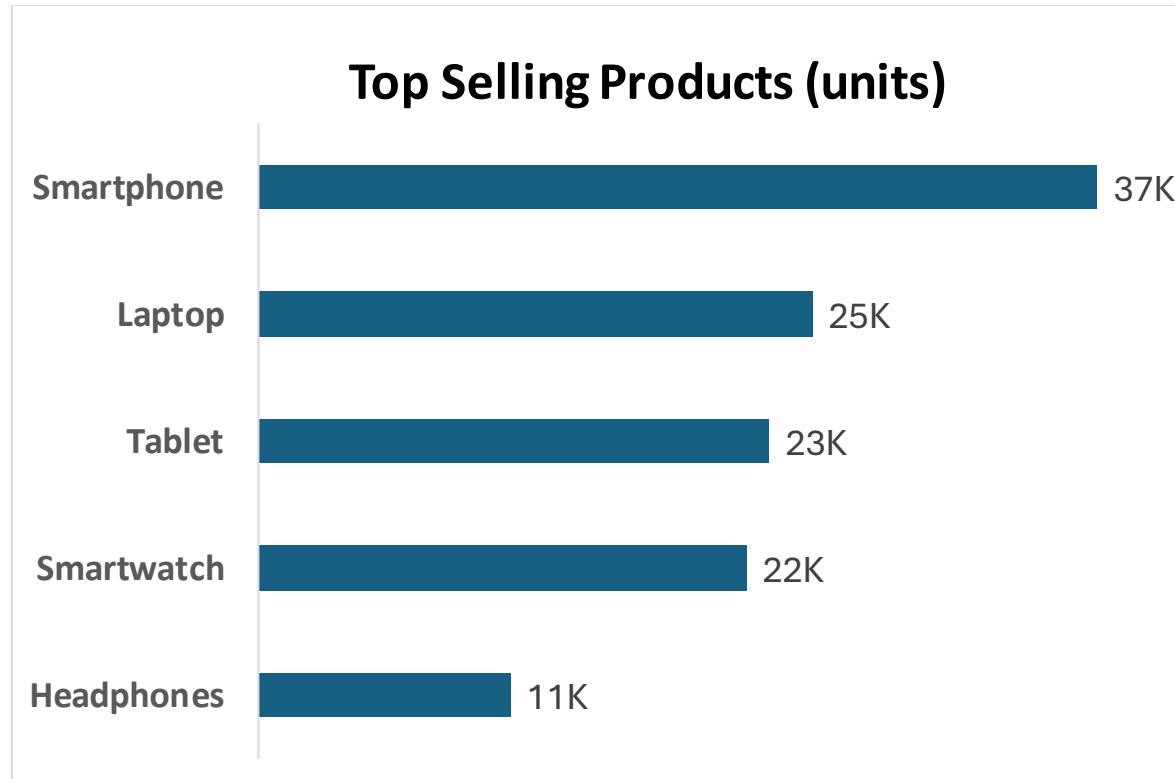
This process was applied uniformly across all analyzed questions, ensuring consistent methodology and clear insights.

### How have sales evolved monthly?



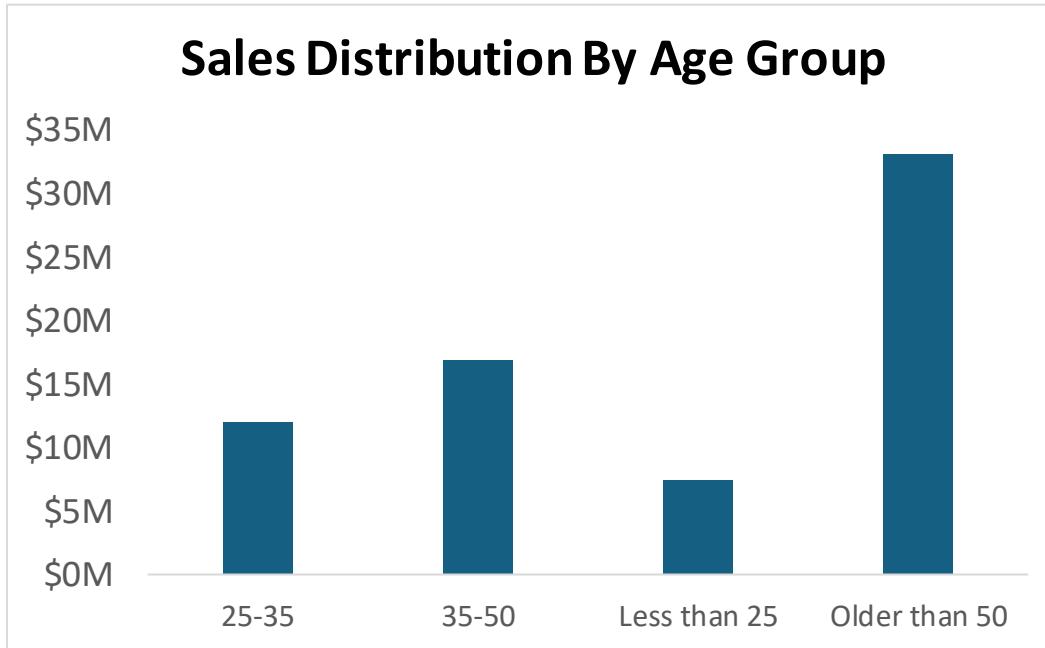
Insight: Sales remained stable at around \$7M per month from January to August, peaking at \$7.3M in August. However, from September onwards, revenue collapsed by more than 70% to just \$2.2M in December, suggesting seasonality or ineffective year-end campaigns.

## Which product category sells the most units?



Insight: Smartphones lead with 37K units sold, significantly ahead of laptops (25K) and tablets (23K). This heavy reliance on one product category indicates strong customer preference but also potential business risk if smartphone demand declines.

What is the sales distribution per age group?



Insight: Customers aged 50+ contribute \$33M (48% of total sales), making them by far the dominant segment. In contrast, buyers under 25 generate only \$7.4M (11%), highlighting a strong concentration of purchasing power in older demographics and a potential growth opportunity in younger markets.

## Dashboard Overview

### SALES & CUSTOMER INSIGHTS



The final Excel dashboard consolidates the main sales questions into a single interactive view. It integrates pivot charts and slicers, enabling dynamic exploration by product, payment method, age group, and month.

While this report shows a static snapshot, the full dashboard remains fully interactive in Excel.

- Age group impact: Customers over 50 generate nearly half of total sales (\$33M), while the under-25 segment lags behind with only \$7.4M.
- Seasonality: Sales peak mid-year, especially in August (\$7.3M), but sharply decline toward year-end, dropping by over 70% in December.
- Product performance: Smartphones clearly dominate with 37K units sold, far surpassing other categories.

These insights suggest that focusing on older customer segments, reinforcing strategies during year-end slumps, and prioritizing smartphone marketing could maximize sales growth. Additionally, the dashboard provides complementary views on payment methods, gender-based product preferences, and product ratings, offering further angles for decision-making.