

CORRELATION

- Correlation in Power BI refers to the **statistical relationship between two variables**, showing how one variable changes in relation to another.
- It helps identify whether an increase or decrease in one field affects another, revealing **positive, negative, or no correlation** between them.

Types of Correlation:

1. Positive Correlation

When one variable increases, the other also increases.

Example: Higher sales are associated with higher profit.

2. Negative Correlation:

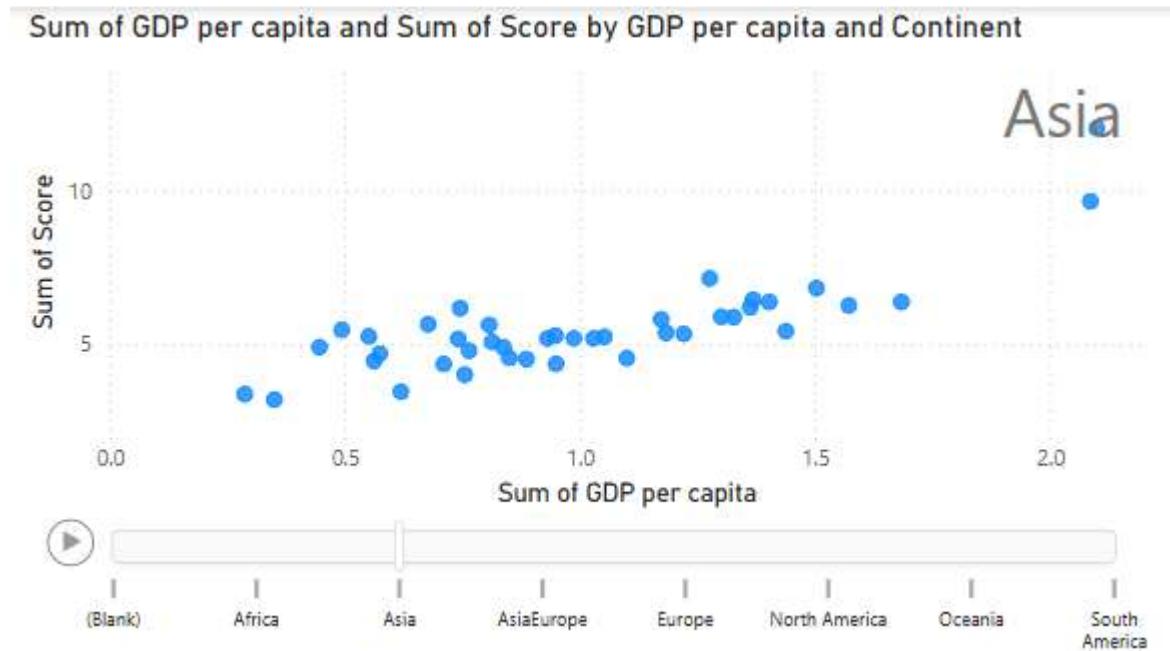
When one variable increases, the other decreases.

Example: Increase in discount leads to a decrease in profit margin.

3. No Correlation:

There is no relationship between the two variables.

Example: Product color and sales amount may have no connection.



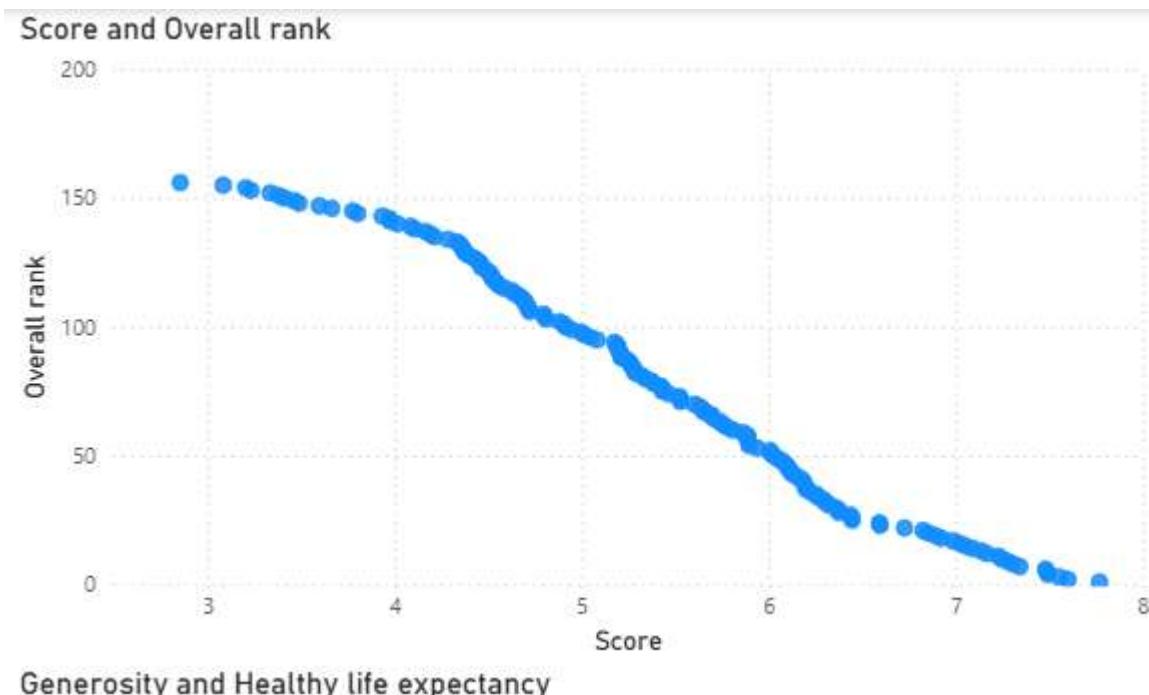
Insights:

✓ Weak Positive Correlation:

There is a clear positive relationship between **GDP per capita** and **Score** — as GDP per capita increases, the score also tends to increase.

✓ **Outliers:**

A few countries (such as one in Asia on the far right) have very high GDP per capita and score, suggesting strong economic and performance indicators compared to others.



Insights:

✓ **Strong Negative Correlation:**

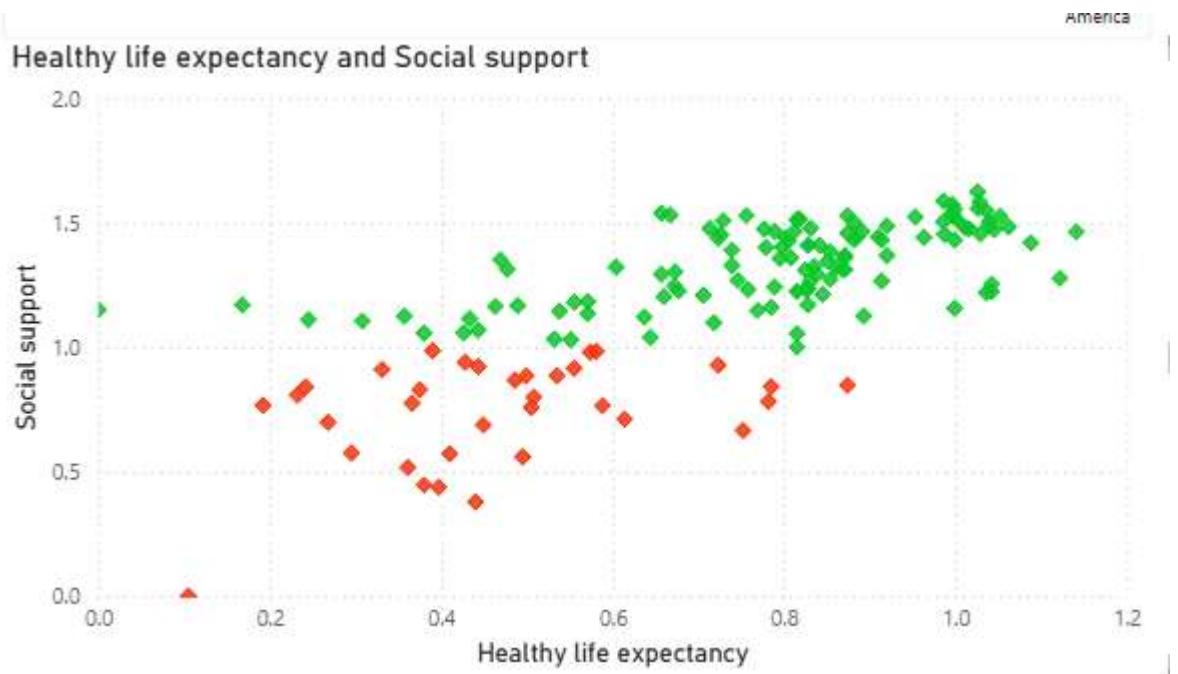
As the **Score** increases, the **Overall Rank** decreases sharply. This indicates that higher scores are associated with **better (lower) ranks**, showing a strong **negative correlation**.

✓ **Performance Pattern:**

Countries with scores above 6 generally fall in the top rankings (1–50), reflecting higher levels of generosity and healthy life expectancy.

✓ **Consistent Relationship:**

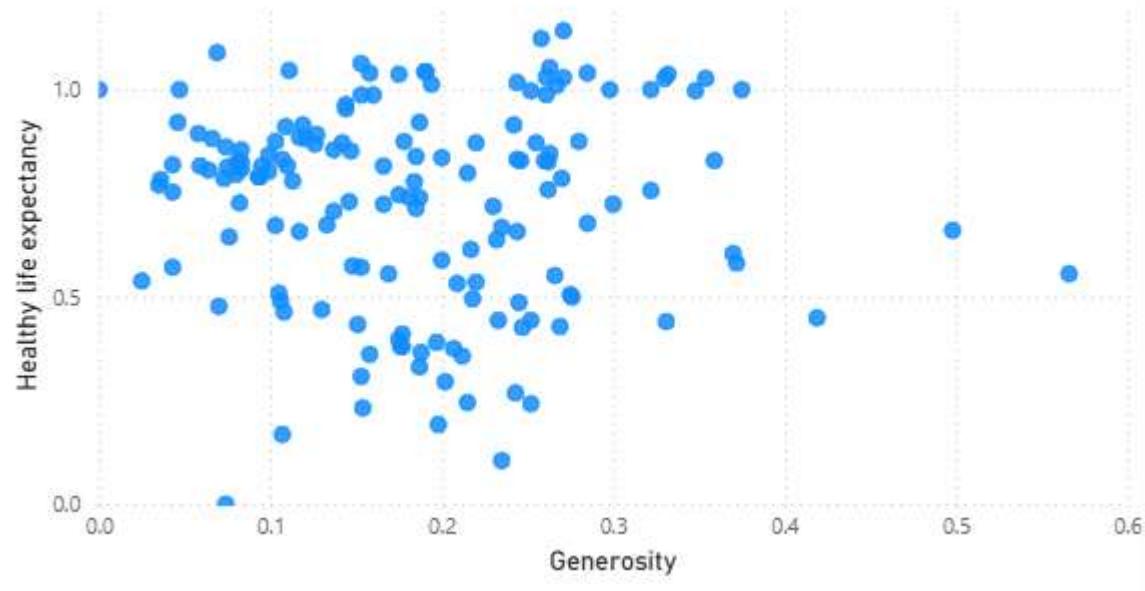
The data points form a smooth downward trend, indicating a **consistent and predictable relationship** between score and overall rank.



Insights:

- ✓ **Positive Correlation:**
As *Healthy life expectancy* increases, *Social support* also rises. Countries with longer healthy life expectancy tend to have stronger social support systems.
- ✓ **Performance Pattern:**
Nations in the higher life expectancy range (above 0.8) consistently show strong social support levels (above 1.2), indicating a positive well-being ecosystem.
- ✓ **Lower End Trend:**
Countries with lower life expectancy (below 0.5) exhibit weaker social support, showing disparities in healthcare and community strength.
- ✓ **Consistent Relationship:**
The upward trend of data points highlights a stable and predictable relationship between both indicators.

Generosity and Healthy life expectancy



Insights:

- ✓ **No Correlation:**

The scatter points are widely spread, showing no clear upward or downward pattern between *Generosity* and *Healthy life expectancy*.

- ✓ **Performance Pattern:**

Both high and low generosity levels are observed across different life expectancy values, indicating limited interdependence.

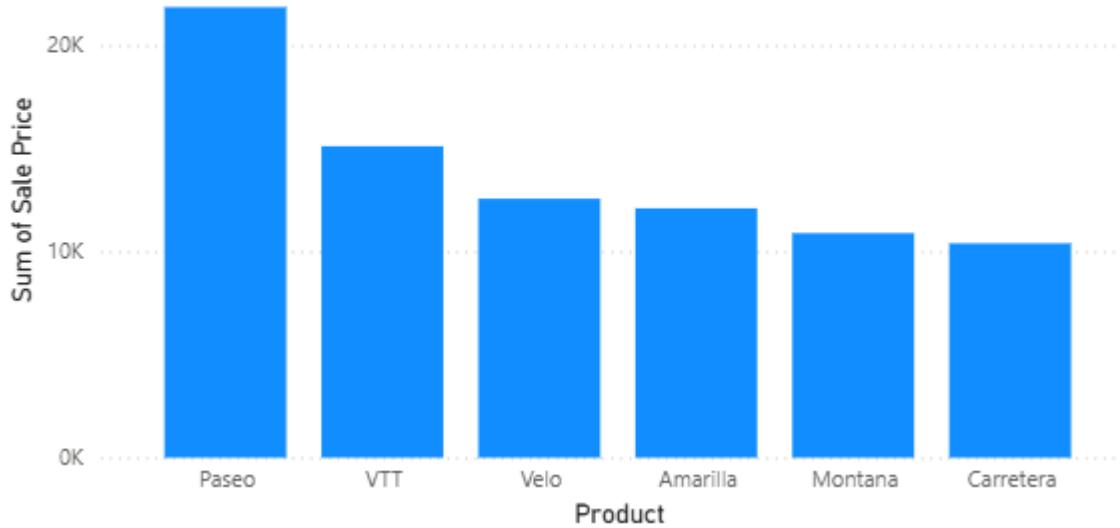
- ✓ **Irregular Distribution:**

Countries with similar generosity levels show varying healthy life expectancies, suggesting other dominant influencing factors like healthcare access and economy.

- ✓ **Lack of Consistency:**

The scattered pattern shows an unpredictable relationship, lacking any defined trend.

Sum of Sale Price by Product



Bar Chart – Sum of Sale Price by Product

This bar chart shows that **Paseo** has the highest sale price among all products, followed by **VTT** and **Velo**.

Products like **Amarilla**, **Montana**, and **Carretera** contribute comparatively less. This indicates that Paseo is the top-performing product in terms of total revenue.

Sum of Units Sold by Country

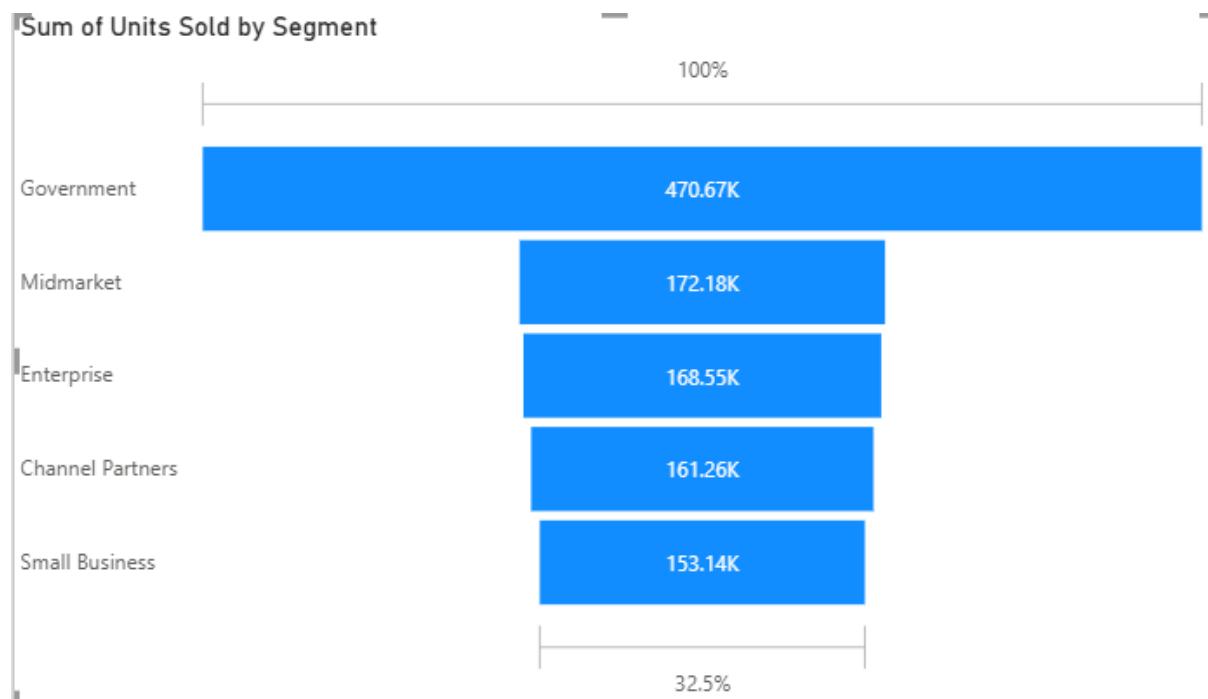


Map Chart – Sum of Units Sold by Country

The map visual shows that **North America and Europe** have the largest sales volumes. These regions dominate global distribution and contribute significantly to total units.

sold.

Other regions show smaller sales bubbles, suggesting potential markets for expansion.

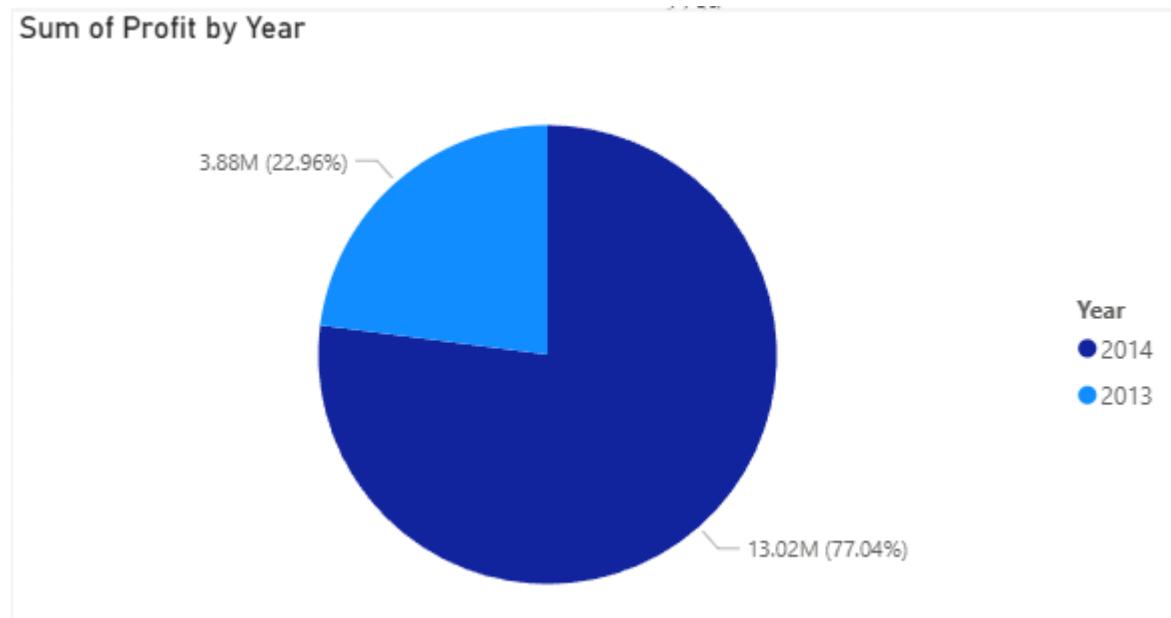


Bar Chart – Sum of Units Sold by Segment

This horizontal bar chart highlights that the **Government segment** has the highest unit sales.

Other segments like **Midmarket**, **Enterprise**, and **Channel Partners** show moderate sales levels.

It reveals that government contracts are the main revenue drivers for the business.



Pie Chart – Sum of Profit by Year

The pie chart compares profit by **year (2013 vs 2014)**.

2013 accounts for **77.04%** of total profit, while **2014** contributes only **22.96%**, showing a decline.

This drop indicates reduced profitability or increased costs in 2014.

Discount Band	Sum of Sale Price	Sum of Units Sold	Sum of Discounts	Sum of Profit
High	28317	398087	53,17,026.28	33,88,866.73
Low	21426	261858	8,85,675.80	61,88,857.70
Medium	28260	379697	30,02,546.16	55,79,522.84
None	4897	86164	0.00	17,36,455.00
Total	82900	1125806	92,05,248.24	1,68,93,702.26

Table – Discount Band Summary

The table displays sales, units, discounts, and profit by **discount band**.

The **Low discount band** yields the **highest profit (₹61.88M)**, even with fewer units sold.

Meanwhile, **High and Medium** bands bring more sales volume but lower profit margins due to higher discounts.