

# Global Relationship Between **Youth Male Literacy Rate Percent, ages 15-24** and **GDP per capital in 2011**: A Mapping and Correlation Analysis

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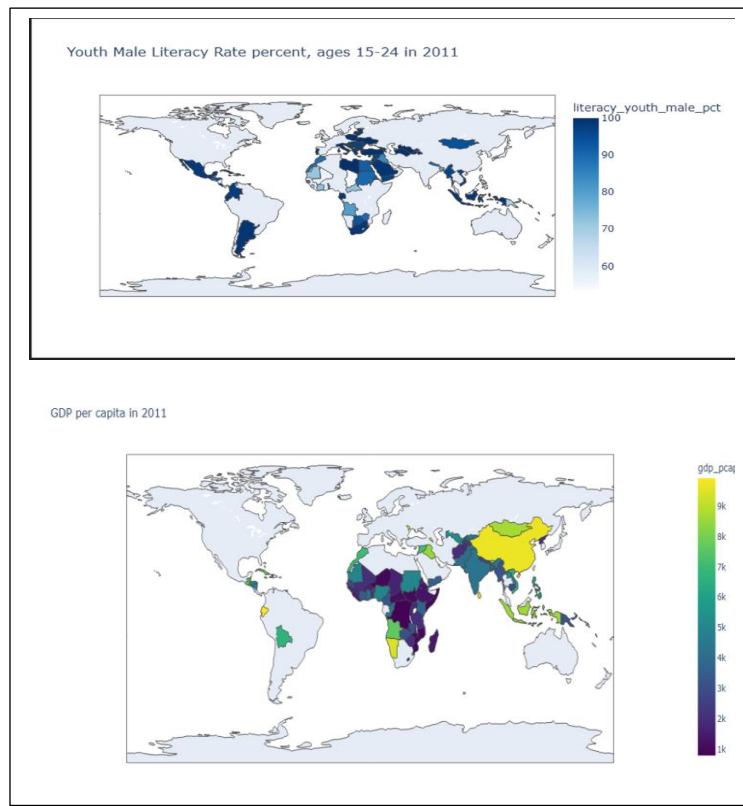
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## Goals of the report

1. **Compare indicators globally** – Show how each indicator is distributed across countries (via world maps).
2. **Visualize relationships** – Use a scatterplot to reveal whether there's a positive, negative, or no relationship between the two indicators.
3. **Quantify strength of relationship** – By calculating Pearson's correlation coefficient  $R$ , the report aims to measure how strongly the two indicators move together.
4. **Provide interpretation** – Summarize whether the indicators are related (and how), which can guide understanding of patterns, policy, or research questions.

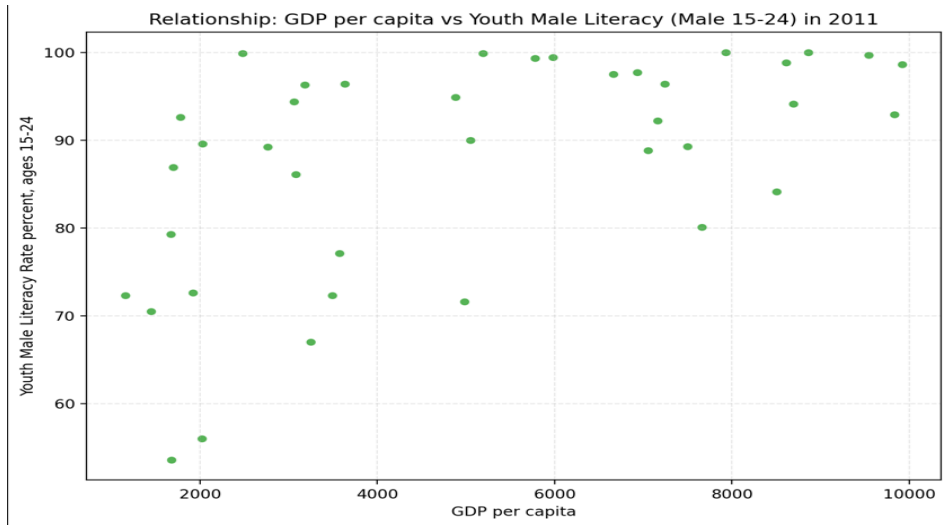
## Comparing indicators globally

After plotting the **world maps**, we see how each indicator is distributed across countries in 2011. The first map shows the global variation of **Youth Male Literacy Rate Percent, ages 15-24**, highlighting regions with high and low levels. Similarly, the second map shows the distribution of **GDP per capital in 2011** across the same countries.



## Visualize relationships

When the two datasets were merged and compared, the **scatterplot** below provide a direct view of their relationship. Countries positioned along an upward-sloping trend line indicate a **positive relationship** (as **Youth Male Literacy Rate Percent, ages 15-24** increases, **GDP per capital** also tends to increase). Conversely, a downward-sloping pattern would suggest a **negative relationship**.



## Quantify strength of relationship

The **Pearson's correlation coefficient (r)** quantifies this relationship:

- If  $r$  is close to  $+1 \rightarrow$  strong positive correlation.
- If  $r$  is close to  $-1 \rightarrow$  strong negative correlation.
- If  $r$  is near  $0 \rightarrow$  little or no linear correlation.

This statistical measure supports what is visible in the scatterplot and gives strength to the interpretation.

## Interpretation

This report analyzed the global relationship between **Youth Male Literacy Rate Percent, ages 15-24** and **GDP per capita in 2011**. The world maps revealed regional disparities in both indicators, while the scatterplot and correlation analysis demonstrated the nature and strength of their relationship.