

# Group-4 - Countries of the World - Story

Group-4 - Countries of the world	Introduction	Objective of the project	Dataset Overview	Data Cleaning	Regional Comparison of GDP and Literacy Rates	Impact of Agricultural, Industrial and Service Sectors	Health Indicators and Net Migration	Climate and Agricultural Viability	Technology and Communication
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## EDS 6397 – INFORMATION VISUALIZATION

Fall 2023  
Professor: Dr. Lucy Nwosu Ph.d

### Countries of the World

**Group - 4**  
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**Introduction:**  
In this presentation, we explore the 'Countries of the World' dataset through the lens of Tableau, seeking to understand how economic and health indicators vary across global regions. We'll examine the ties between GDP, literacy, and mortality rates, and dissect the influence of agricultural, industrial, and service sectors on economic development. Additionally, we'll consider how climate impacts agricultural potential and the role of technology in advancing prosperity and education. Our visualizations will offer you interactive insights, revealing the complex dynamics of development indicators.

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**Objective:**  
This report delves into global development indicators, analyzing the intricate connections between economic metrics (GDP per capita) and health indicators (infant mortality, birth rates, death rates). Using the "Countries\_of\_the\_world" dataset, we explore the influence of technology, education, climate, agricultural viability, and historical context on a nation's economic standing. By unraveling these relationships, the report aims to provide valuable insights into current global development dynamics, offering a multidimensional understanding. The findings intend to guide future research and inform policy decisions for enhanced economic and health outcomes on a global scale.

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## Dataset Overview:

The dataset contains various indicators for countries around the world, including 20 attributes and 227 records:

- Country Name(227)
- Region(11)
- Population
- Area (sq. km)
- Population Density (people per sq. km)
- Coastline Ratio (coast/area)
- Net Migration (migrant(s)/1,000 population)
- Infant Mortality (per 1,000 births)
- GDP per Capita (\$)
- Literacy (%)
- Phones (per 1,000 people)
- Percentage of land arable
- Percentage of land under crops
- Percentage of land other
- Climate (1-4)
- Birthrate (per 1,000 people)
- Deathrate (per 1,000 people)3 ..

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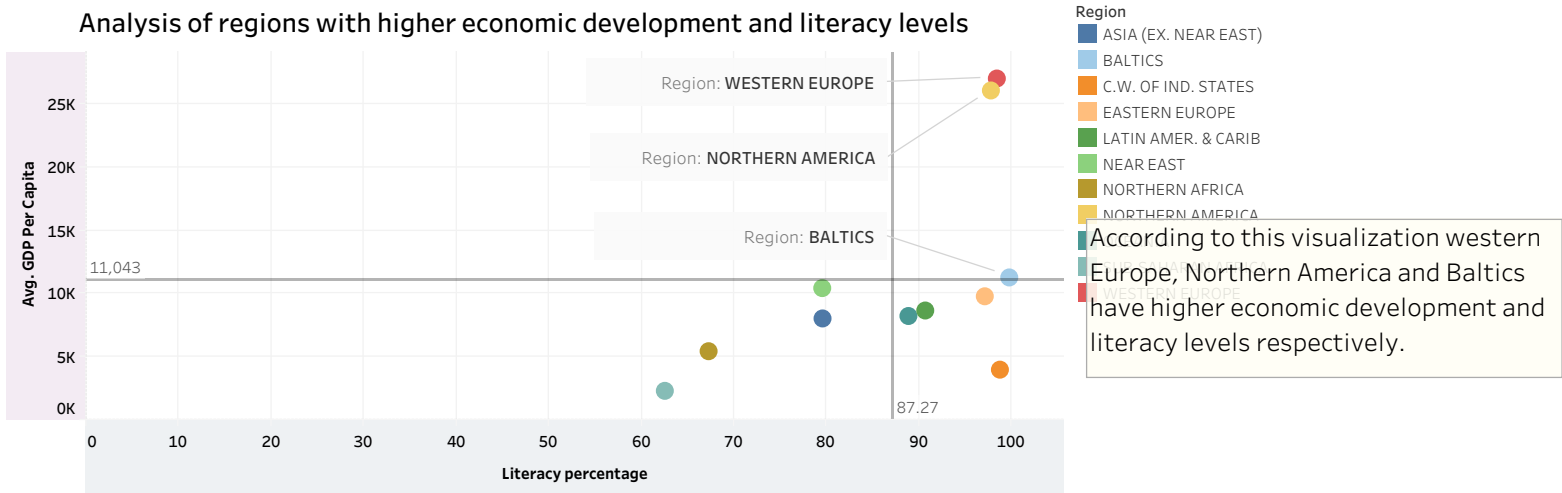
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## Data Cleaning:

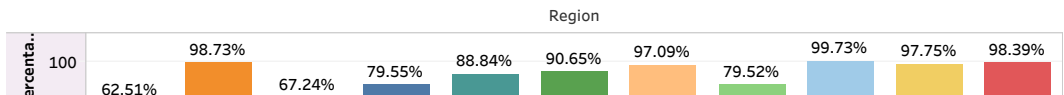
- Renaming the columns with more readability
- Converting the decimal values to international system from the European system.
- Converting the datatype from object to float
- Filling the Missing values according to the mean of the specific region.
- Climate is classified into 4 parts and floating values are rounded off to its nearest integer.
- Saving the Data frame to a .csv file

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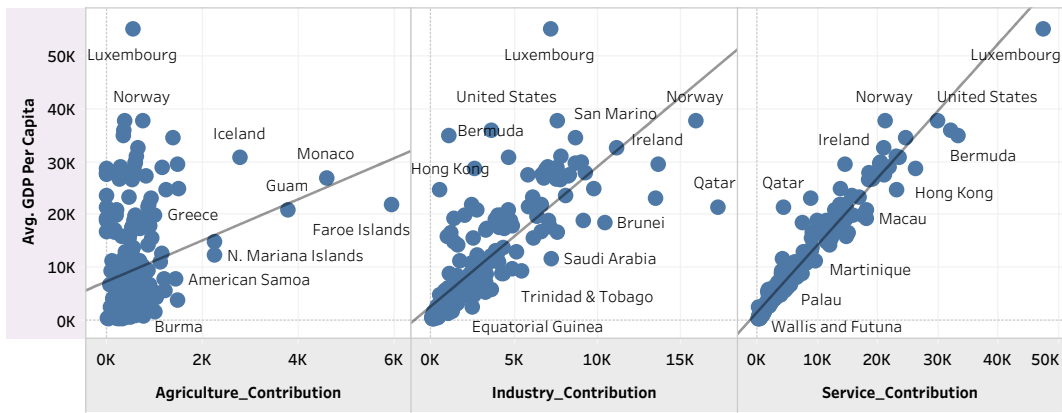
Comparison over GDP and literacy rates across different regions



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Impact of Agricultural, Industrial and Service Sectors to the Economy across countries



Region  
All

Region  
All

Avg. GDP Per Capita  
• 500  
• 20,000  
• 40,000  
• 55,100

Highest Contributing Sector  
Agriculture  
Industry  
Service

Compared to Agriculture, Industry and Service contributions. Service contribution has a higher correlation with Gdp per capita followed by Industry contribution shows moderate correlation with Gdp per capita and Agriculture Contribution has low correlation with Gdp per capita.

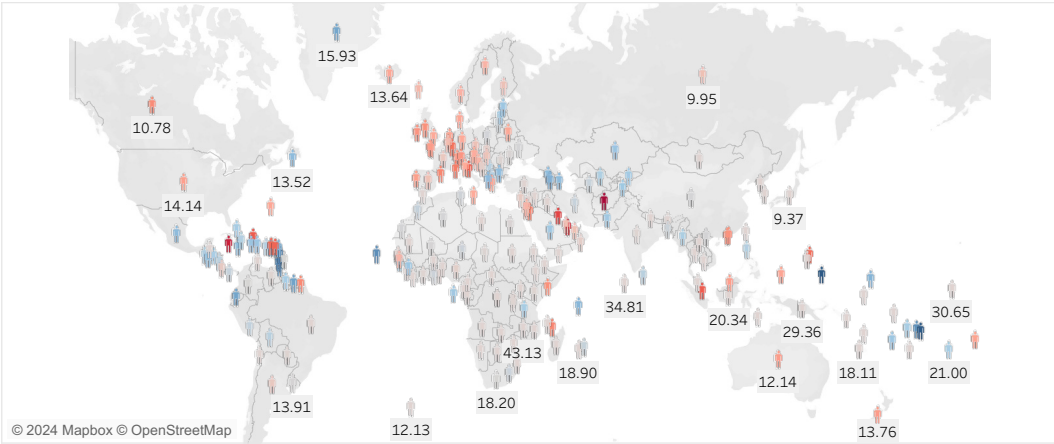
Countries with highest contributing sector



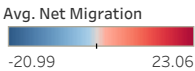
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Relationship between Health indicators and Net Migration



- Region
- ☒ ASIA (EX. NEAR EAST)
  - ☒ BALTICS
  - ☒ C.W. OF IND. STATES
  - ☒ EASTERN EUROPE
  - ☒ LATIN AMER. & CARIB
  - ☒ NEAR EAST
  - ☒ NORTHERN AFRICA
  - ☒ NORTHERN AMERICA
  - ☒ OCEANIA
  - ☒ SUB-SAHARAN AFRICA
  - ☒ WESTERN EUROPE



Health Indicators

Birthrate

Health Indicators

Birthrate

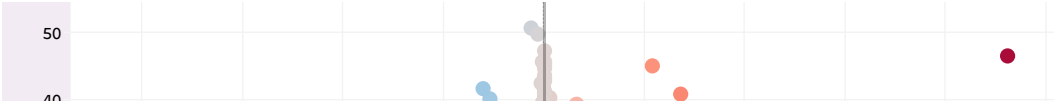
Health Indicators

Birthrate

Show histogram

The death rates, birth rates and infant mortality in relationship to the net migration according to the countries.

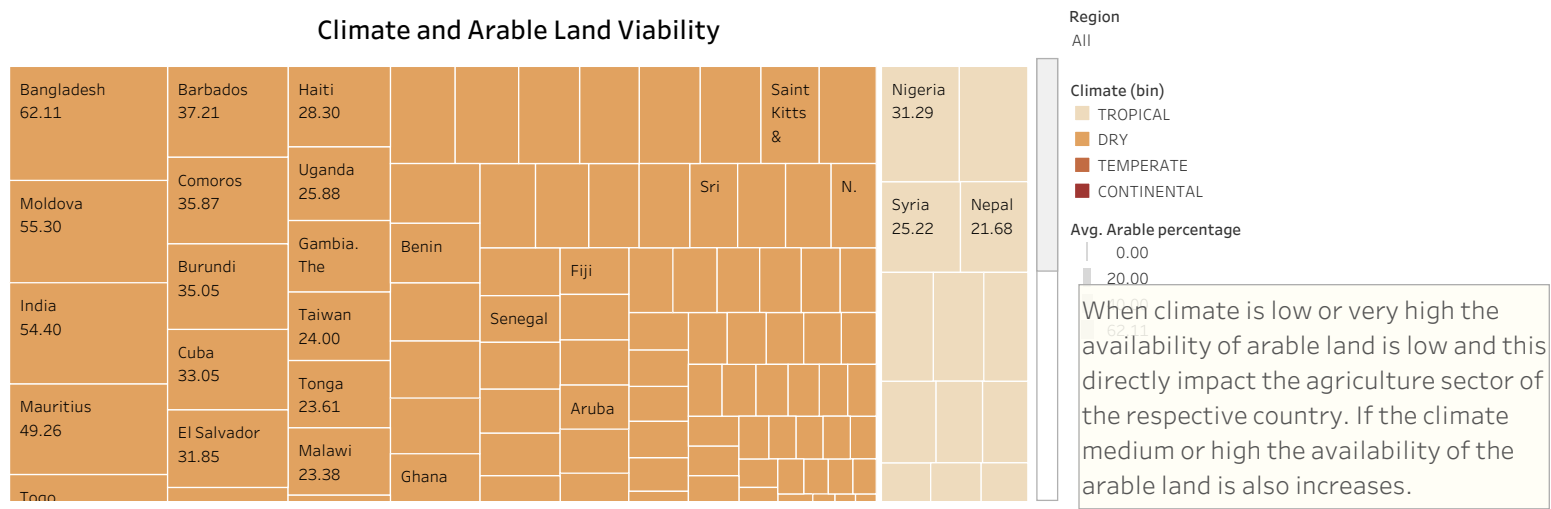
Analysis of Countries with high Net migration with Health Indicators





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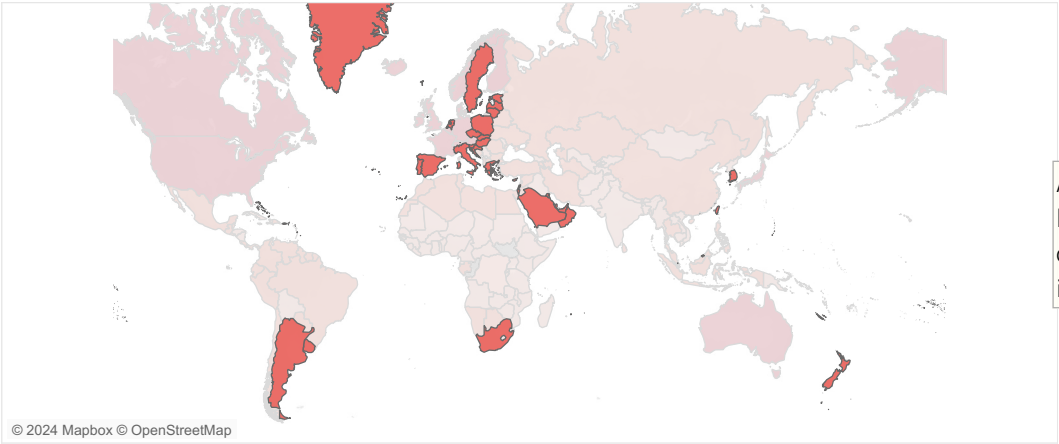
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Analysis of Technology Advancement over Economic prosperity or Literacy Rate

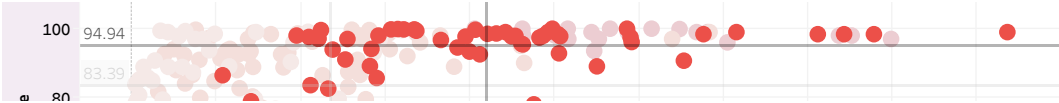


GDP\_categories

- High GDP
- Low GDP
- Medium GDP
- Very High GDP

As the usage of phones increased the literacy rates also increased but for some other countries literacy rates are high irrespective of technology.

Correlation between Literacy percentage and Phones (per 1000 people)



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## Conclusion:

The visual data exploration has highlighted the positive relationship between economic prosperity and literacy rates, and the transition from agriculture-based economies to service-oriented ones in more developed regions. Health indicators and net migration did not show a strong correlation, suggesting other factors at play. The influence of climate on agricultural viability and the link between technological advancement and economic health were also evident. The interactive visualizations allow users to engage deeply with the data, making the complex interrelations accessible and understandable. The group's work underscores the importance of multi-faceted approaches to analyzing global development and the power of visual data storytelling in uncovering trends and informing policy.