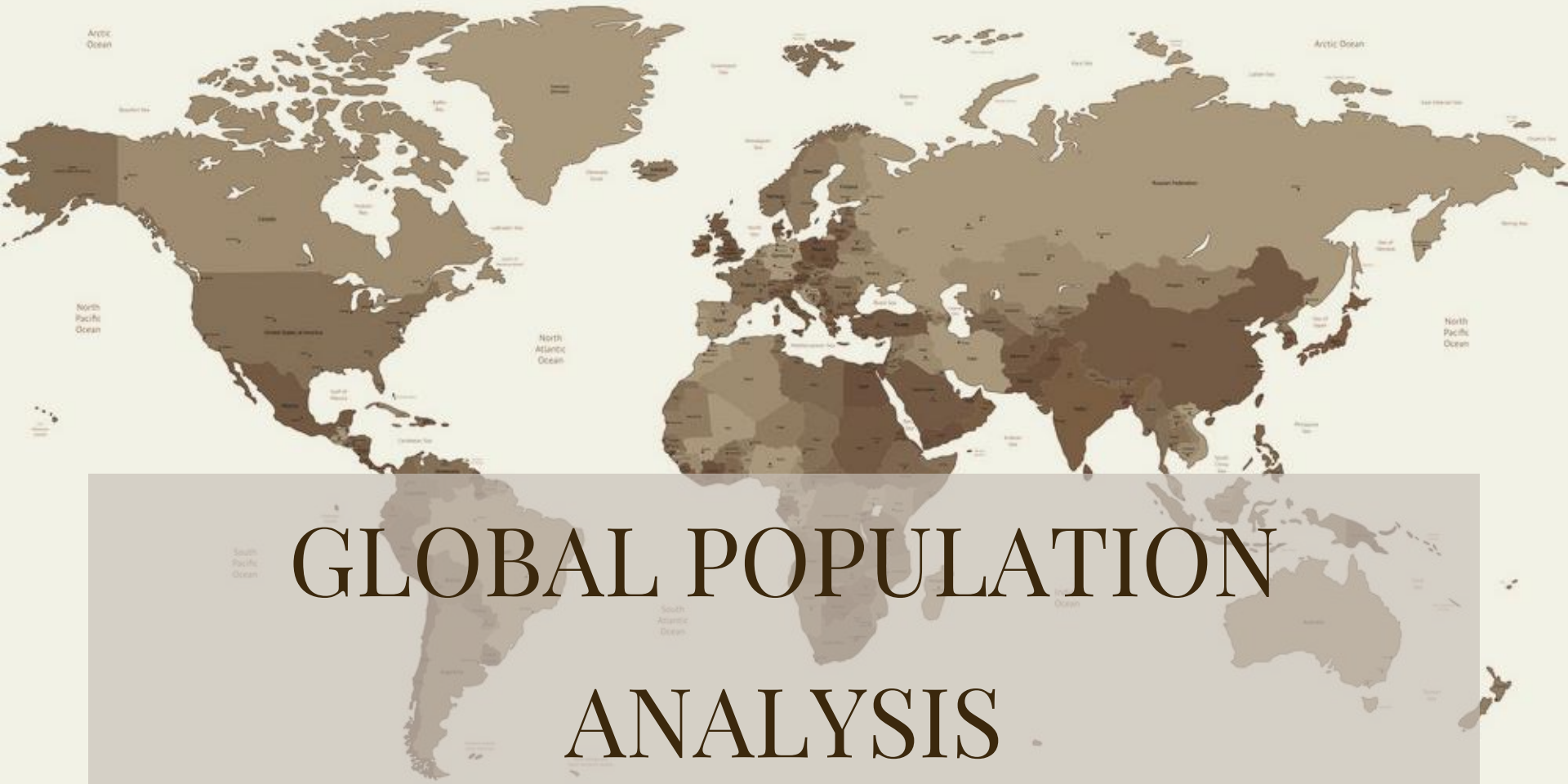

GLOBAL POPULATION ANALYSIS

Meet Our Team

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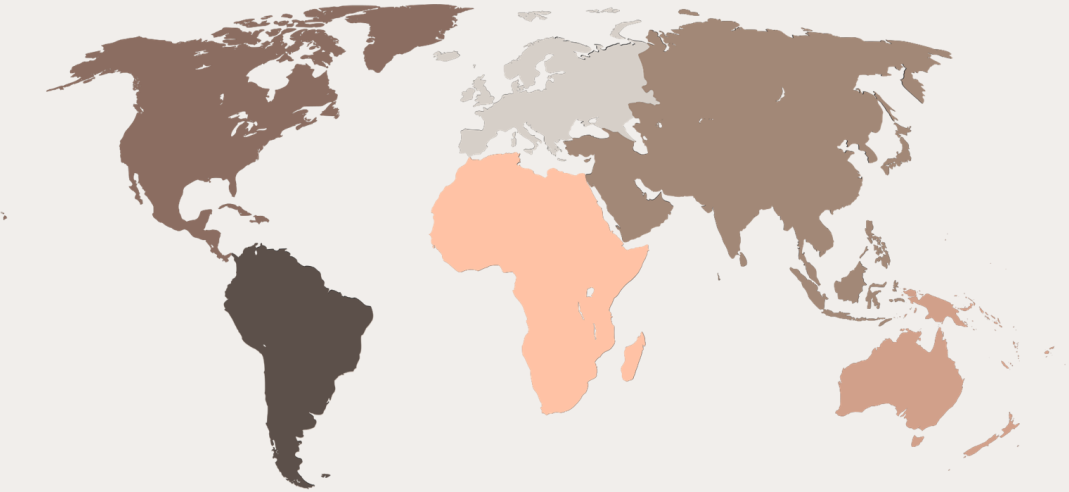
Jayan Francis

OBJECTIVES



- Introduction & Background
- Objectives & Goals
- Dataset Description & Dictionary
- Visualization
- Summary & Conclusion

INTRODUCTION & BACKGROUND

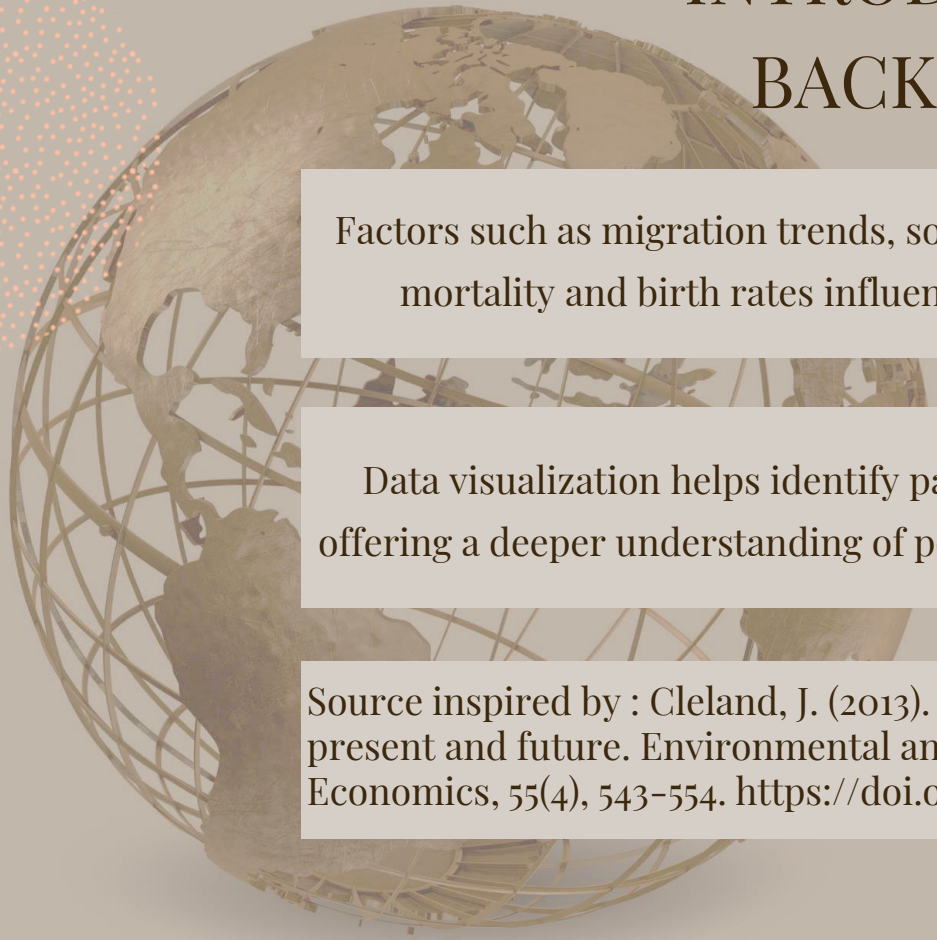
Population statistics are vital for effective governance as they inform decision-making and strategic planning in areas like housing, healthcare, and transportation.

Understanding population patterns, distribution, and changes over time is crucial for urban planning, policymaking, and resource allocation.

Visualizing population data allows for the exploration of global population shifts, revealing insights and significant trends.

Analyzing population changes across recent years and past decades provides a comprehensive understanding of population dynamics.

INTRODUCTION & BACKGROUND



Factors such as migration trends, socioeconomic advancements, and mortality and birth rates influence global population growth.

Data visualization helps identify patterns, differences, and trends, offering a deeper understanding of population development dynamics.

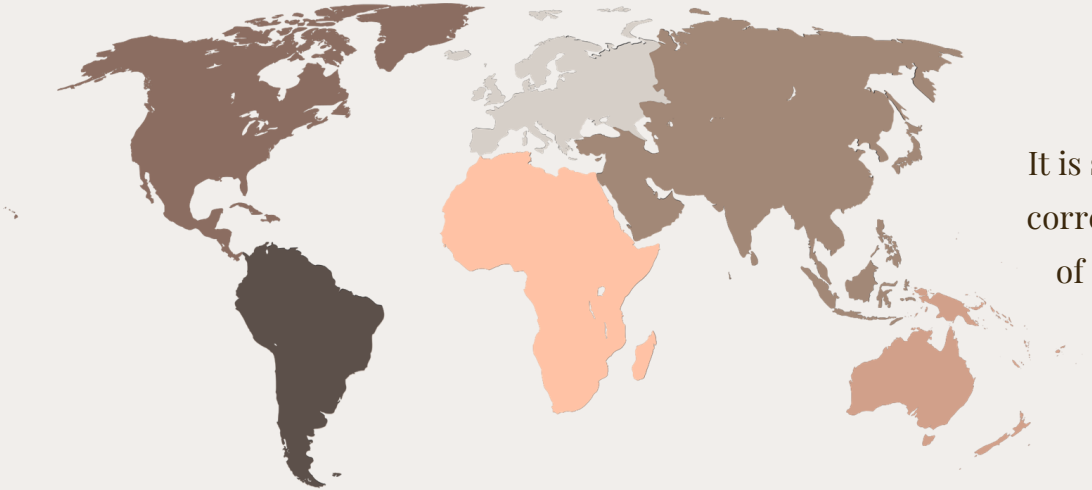
Source inspired by : Cleland, J. (2013). World population growth; Past, present and future. Environmental and Resource Economics, 55(4), 543-554. https://doi.org/10.1007/s10640-013-9675-6

OBJECTIVES & GOALS

- By thoroughly analyzing and visualizing the world population statistics, we can learn essential facts about numerous demographic tendencies.
- We will be able to understand past, current, and projected growth trends with the use of these visualizations.
- On a range of scales, from the global to the national, it can also make use of the capacity to make informed assessments of social, economic, and environmental challenges.
- The study on this dataset will help policymakers and other organizations formulate policies for the benefit of the public.

DATASET DESCRIPTION

The dataset was downloaded from Kaggle by Panda in June of 2023, and it offers data on 234 nations from all seven continents.



It is split into four datasets that correspond to the hemispheres of the North, South, East, and West

The dataset has gone through a small amount of preparation work before analysis.

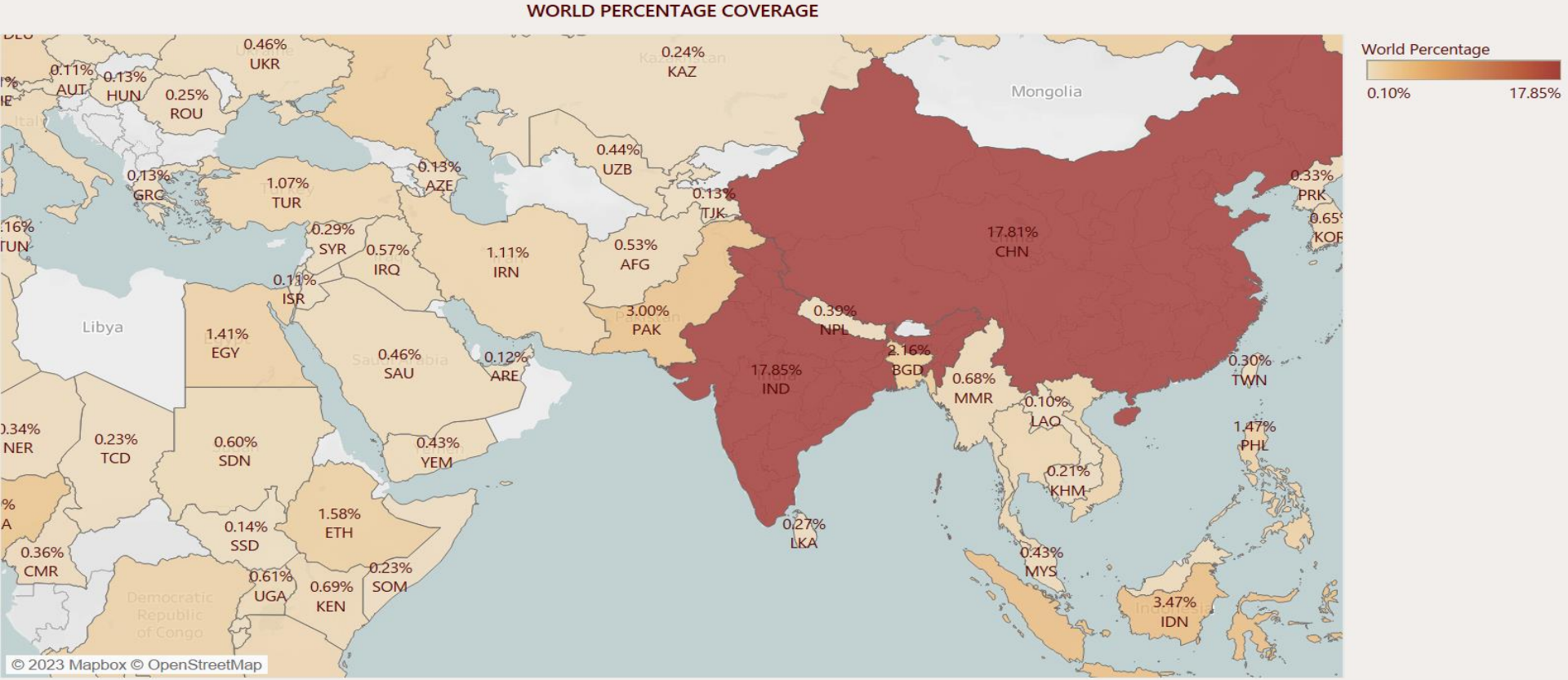
Columns	Description	Data Type
country	The name of the country for which population data is recorded	String
rank	The numerical ranking or position of a country or place based on population	Integer
area	The total area of the country	Integer
landAreaKm	The total area of the country measured in square kilometers	Integer
cca2	A two-letter country code, often used to uniquely identify countries	String
cca3	A three-letter country code, used for unique identification of countries	String
netChange	The net change in population over a specific period, indicating the difference between births, deaths etc.	Decimal
growthRate	The percentage rate at which the population of a country is growing over a specific period	Decimal
worldPercentage	The percentage of the world's total population that a country is representing	Decimal
density	The population density of the country, calculated as the number of individuals per square kilometer	Decimal
densityMi	The population density of the country, calculated as the number of individuals per Mile	Decimal
pop1980 - 2050	Integer total count of individuals in the years starting from 1980, 2000, 2010, 2022, 2023, 2030, 2050	Integer
Continents	The continent to which the country belongs (e.g., Asia, Europe, etc.)	String
Hemisphere	The hemisphere to which the country belongs (e.g., East, West, North, South)	String

The data collection includes 15 metrics including the three dimensions of nation, continent, and hemisphere.

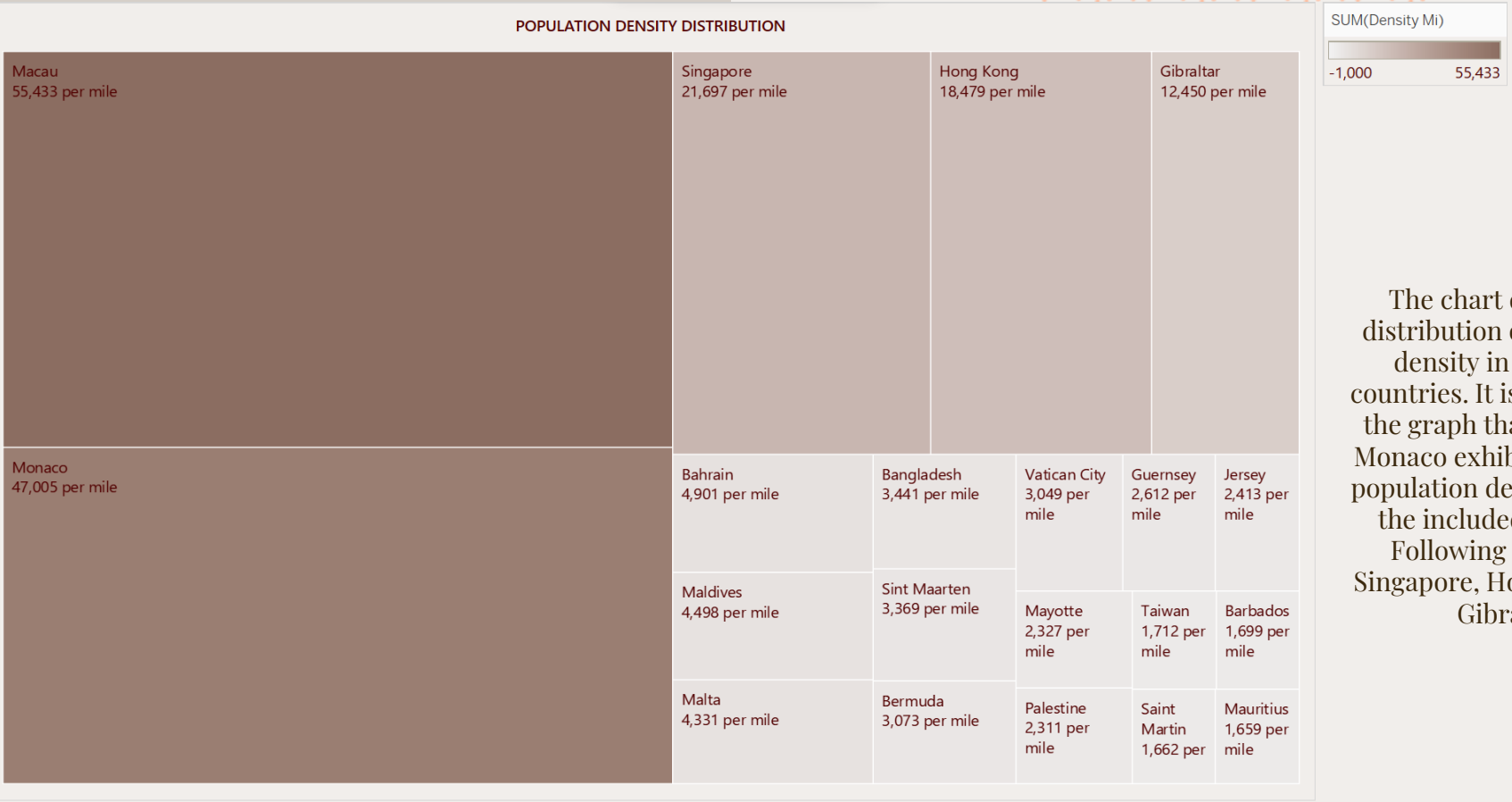
VISUALIZATION

These measurements offer diverse insights into each country's population dynamics, allowing for analysis and comparisons based on variables including rank, area, landAreaKm, netChange, growthRate, worldPercentage, density, and densityPop1980, Pop2000, Pop2010, Pop2022, Pop2023, Pop2030, and Pop2050 are all from Mexico.

Analyze World's Percentage Coverage Across All Countries



The graph above illustrates the percentage of the world's total population for each country. It is evident that India and China have the highest proportion of the world's population compared to all other countries

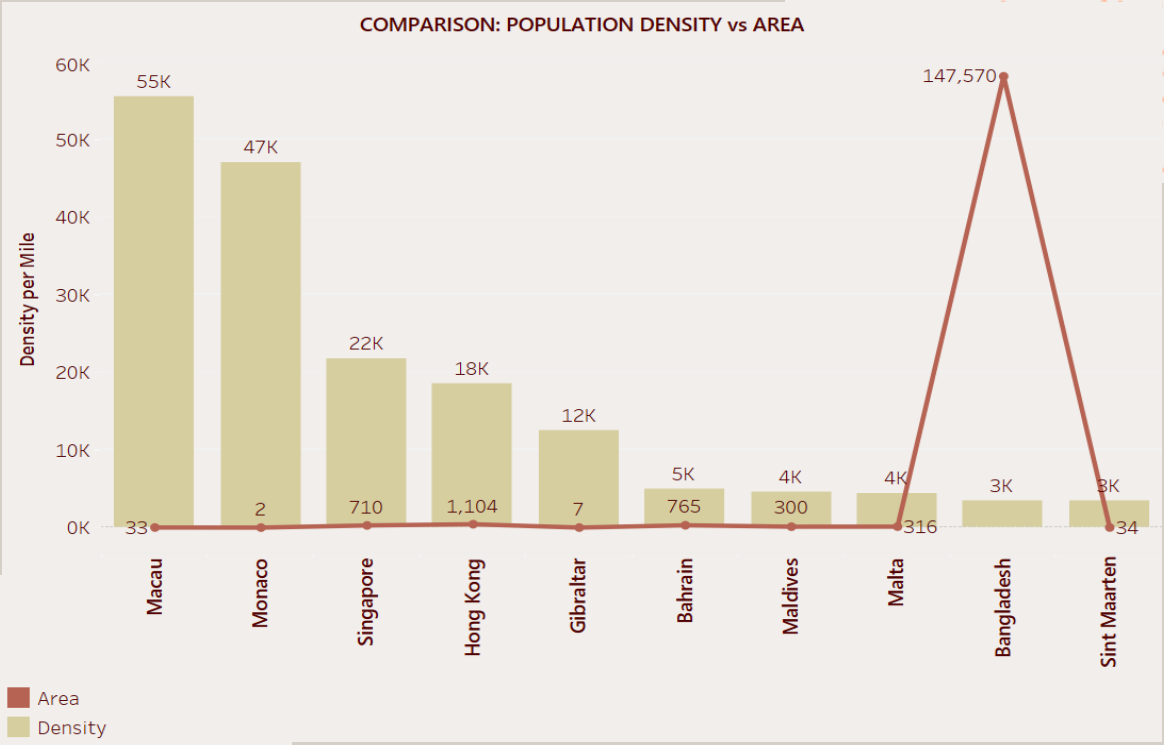


The chart depicts the distribution of population density in the top 20 countries. It is evident from the graph that Macau and Monaco exhibit the highest population densities among the included countries. Following closely are Singapore, Hong Kong, and Gibraltar.

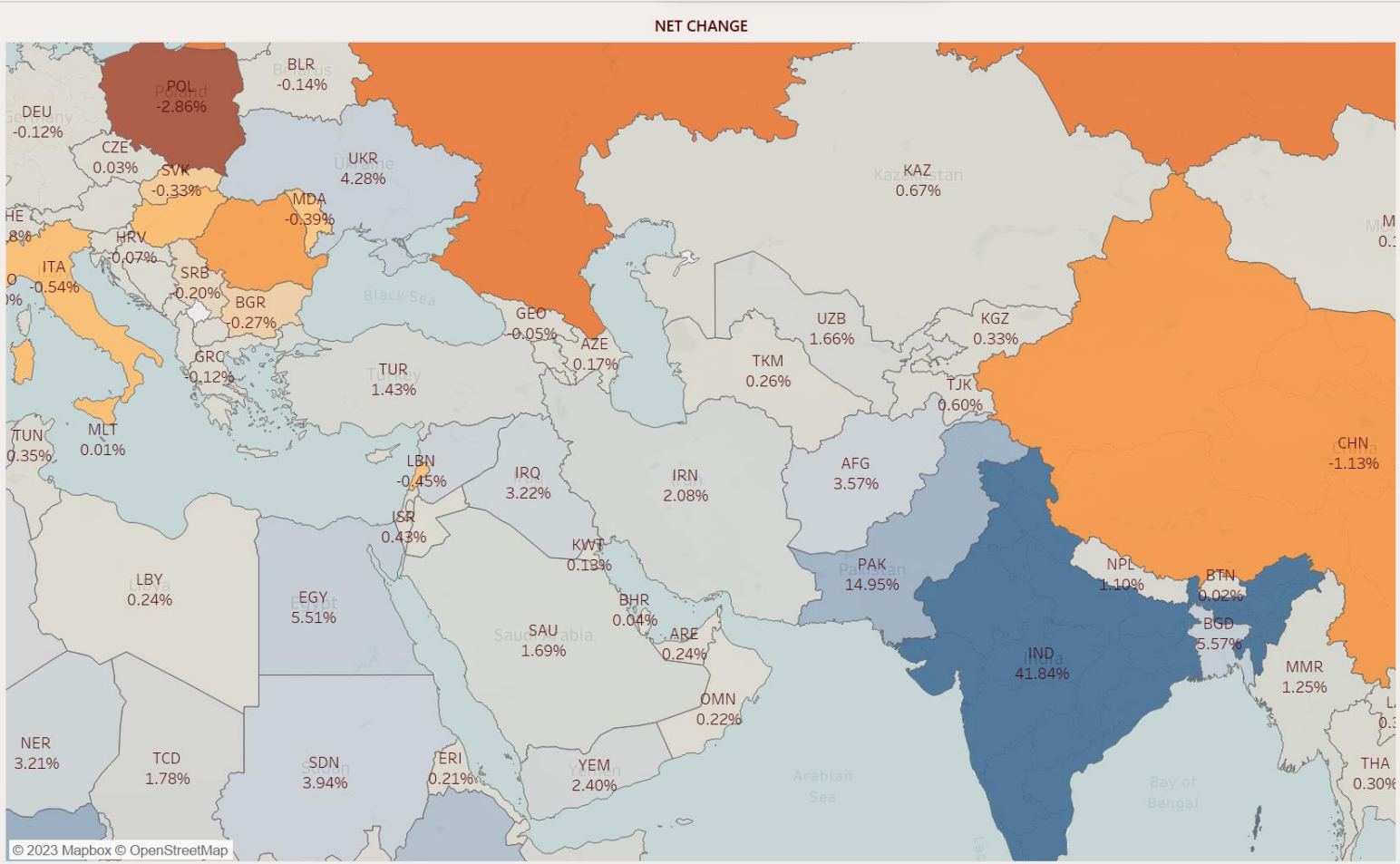
Exploring Population Density Distribution in Top 20 Countries

Conducting Comparative Analysis Between Population Density & Area in Top 10 Countries

The chart compares the population density and area of the top 10 countries. It is evident from the chart that Macau has the highest population density of 55,433 people per square mile. This can be attributed to the fact that Macau is the smallest country in terms of area, spanning only 32.9 square kilometers.



Visualizing the Net Change in Population



This map illustrates the net change in population across all countries. An observation from the map reveals that India exhibits the highest percentage of net change, indicating significant net change in population. Conversely, Poland display the lowest percentages of net change.

Quantifying Relative Difference in Population: 1980 vs. 2023

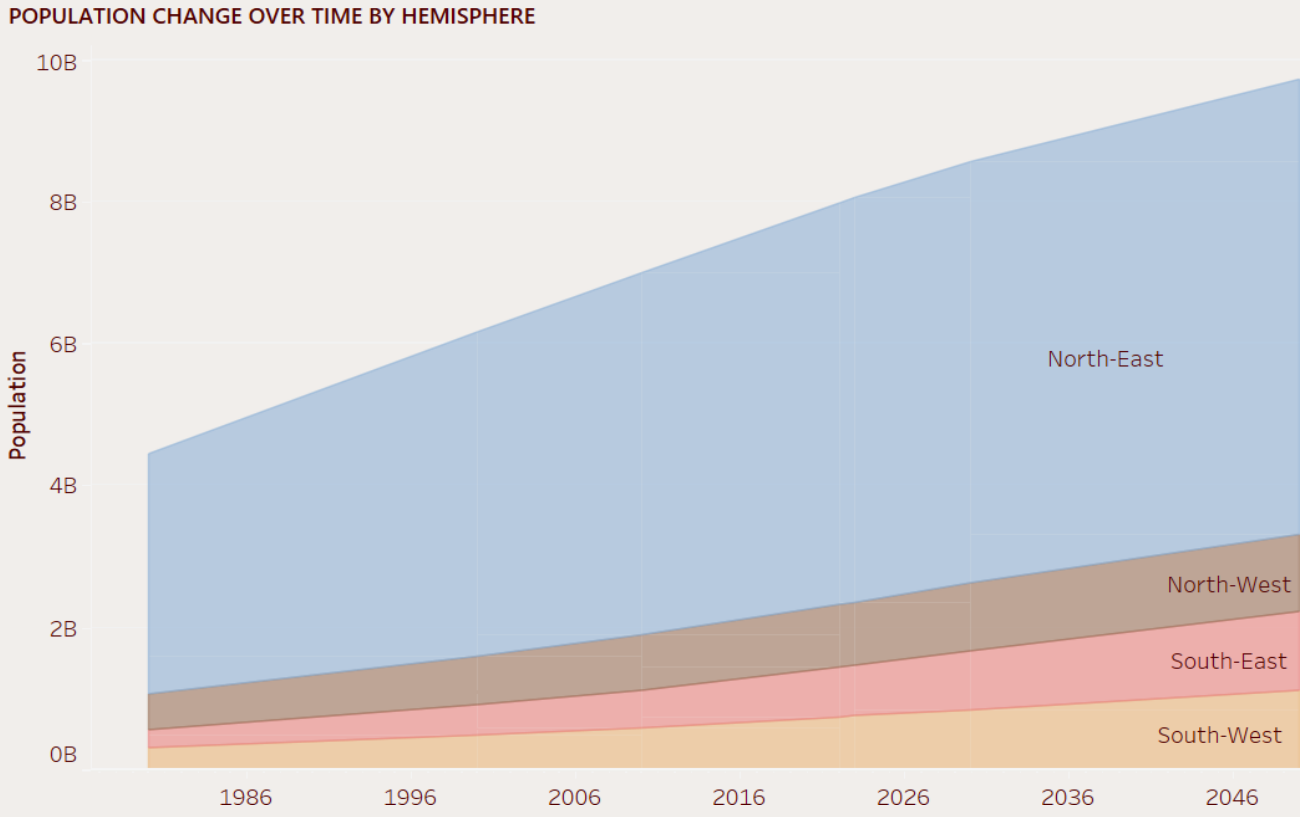
This table showcases the percentage difference in population between the years 1980 and 2023 across different continents. It is clearly evident from the table that the African continent exhibits the highest percentage difference, indicating a substantial change in population over the given period. On the other hand, Oceania demonstrates the lowest percentage difference, suggesting a relatively smaller shift in population during the same timeframe.

RELATIVE DIFFERENCE

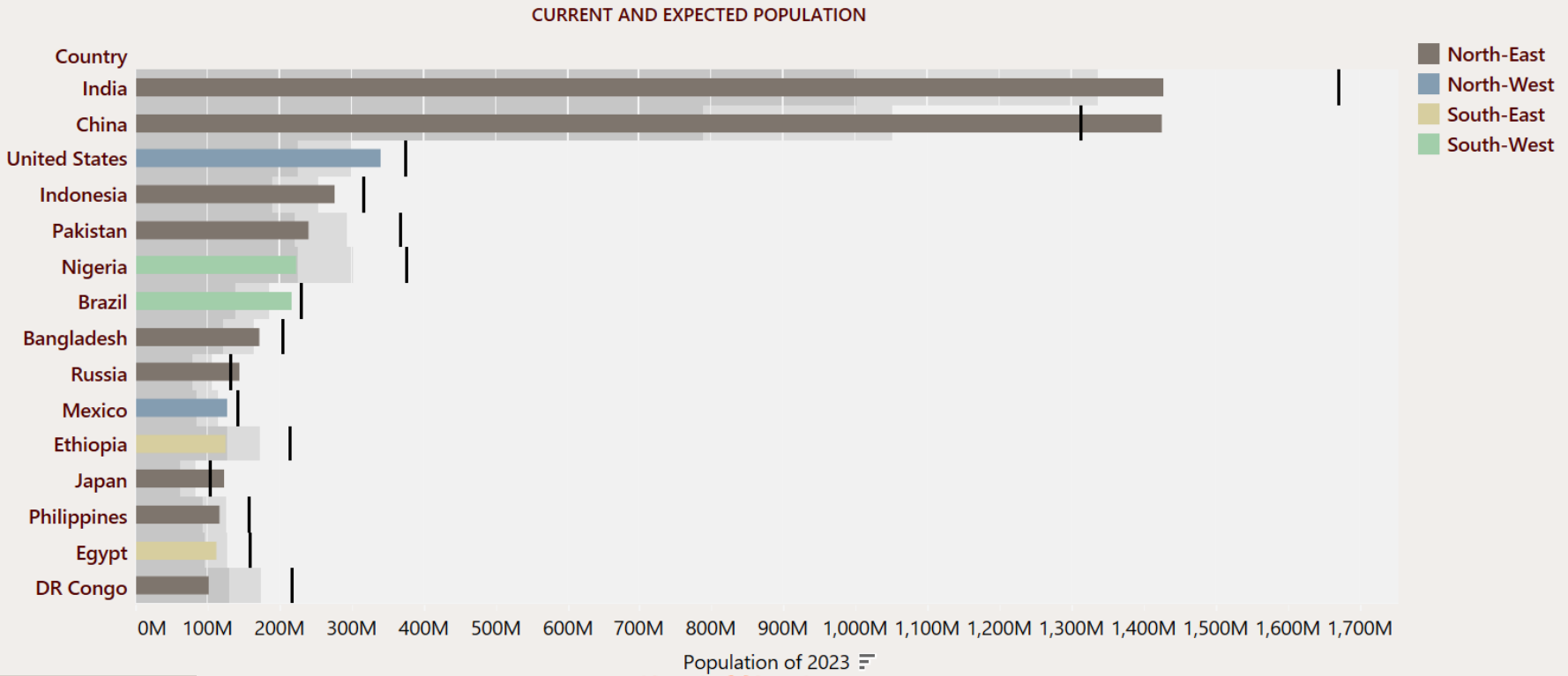
Continent	Pop-1980	Pop-2023	% Difference
Africa	481,536,379	1,460,476,458	117.43%
Asia	2,765,310,682	4,889,757,695	81.30%
North America	368,293,362	604,155,369	37.10%
Oceania	22,920,240	45,575,769	16.62%
South America	241,789,006	439,719,009	13.82%
Europe	562,550,705	603,931,090	8.37%

Visualize Population Change Over Time by Hemisphere

The chart here depicts the distribution of population from the year 1980 to 2050 across four hemispheres. It is evident from the graph that North-East has the highest population as the major countries such as CHINA, INDIA belong to North-East hemisphere.

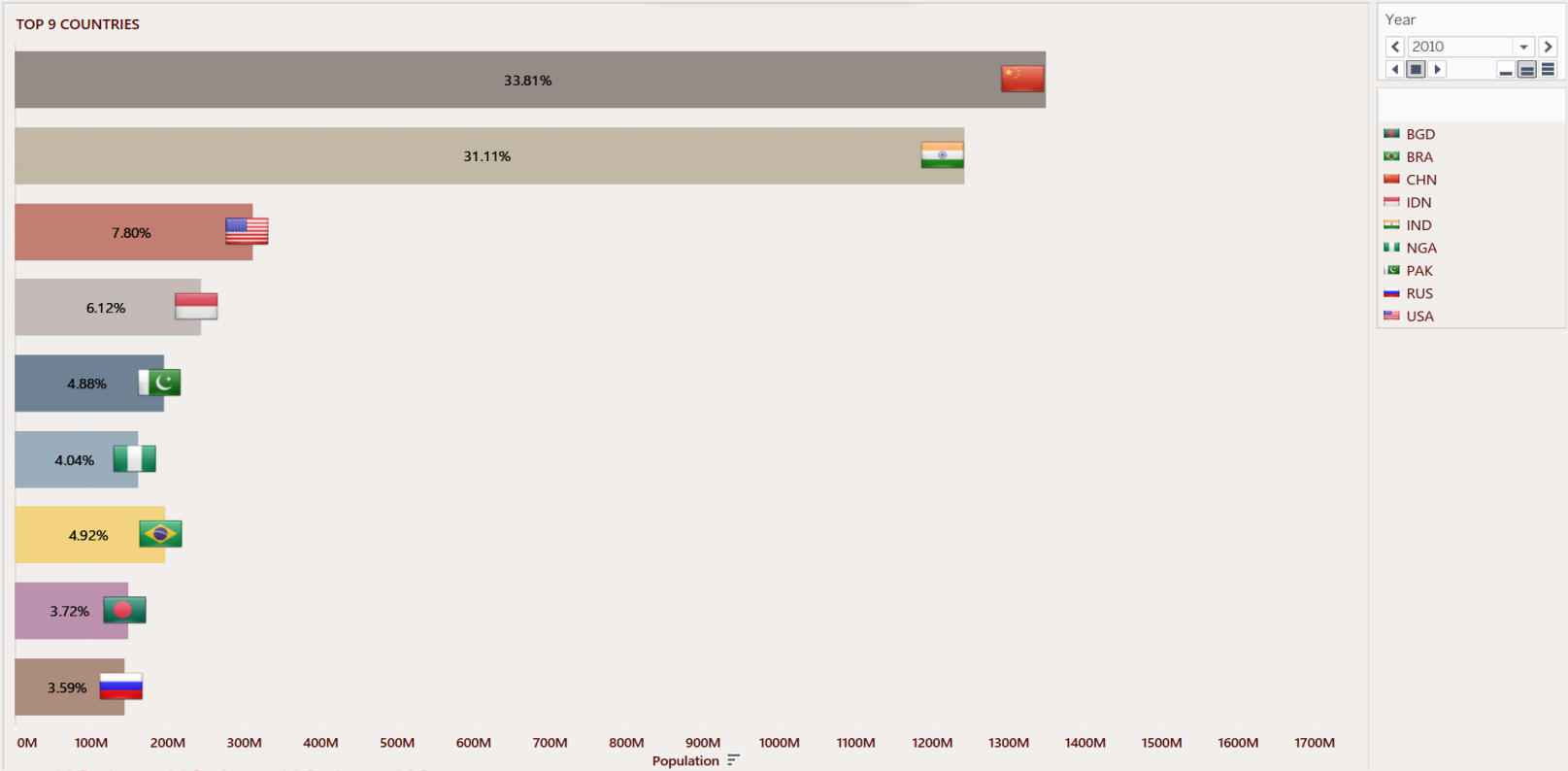


Comparing Current and Expected Population Trends (2023 vs 2050)



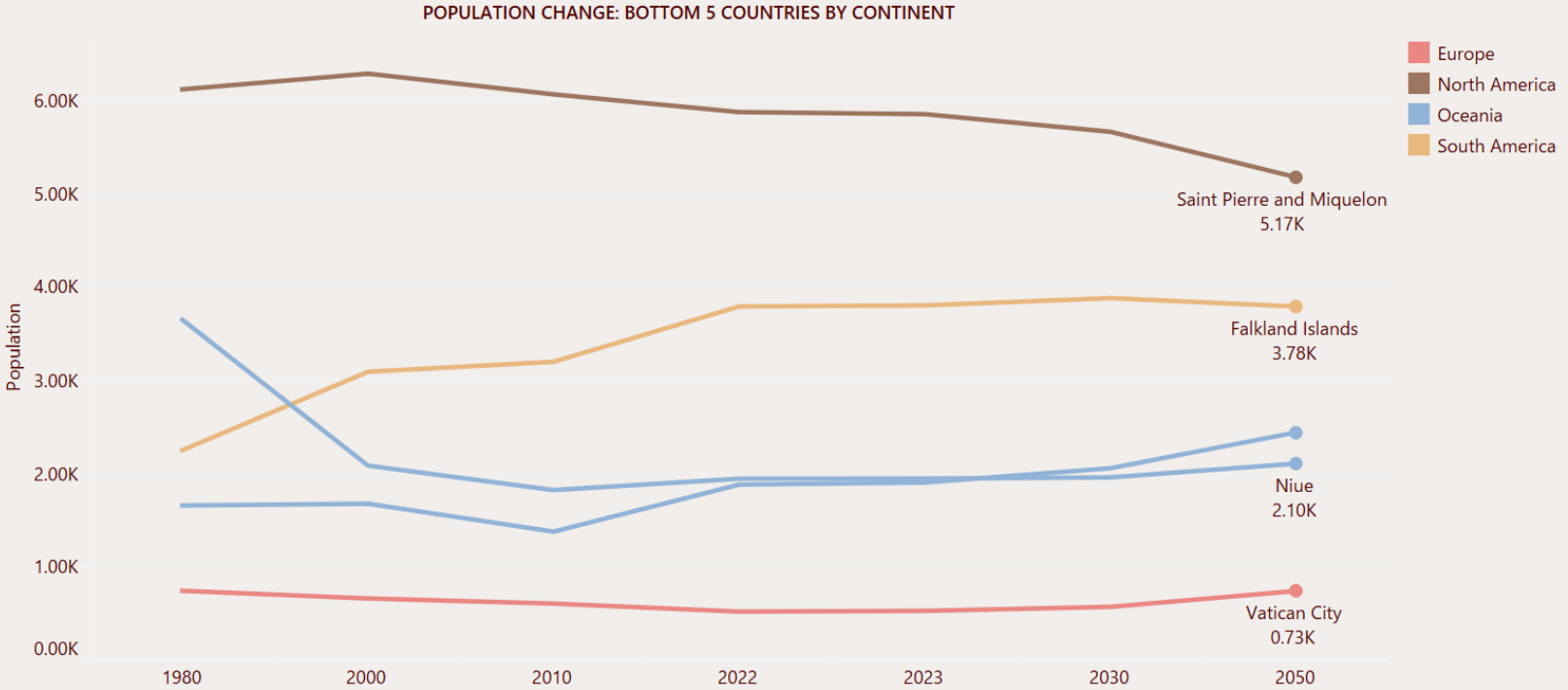
The bullet chart above presents a comparison between the current population in 2023 and the projected population growth in 2050, categorized by hemisphere. The data clearly indicates that the majority of countries are anticipated to experience population growth by 2050. However, notable exceptions include China, Russia, and Japan, which are projected to have a decrease in population during that period.

Visualize the Dynamic Population Changes in the Top 9 Countries Over the Years 1980 to 2050



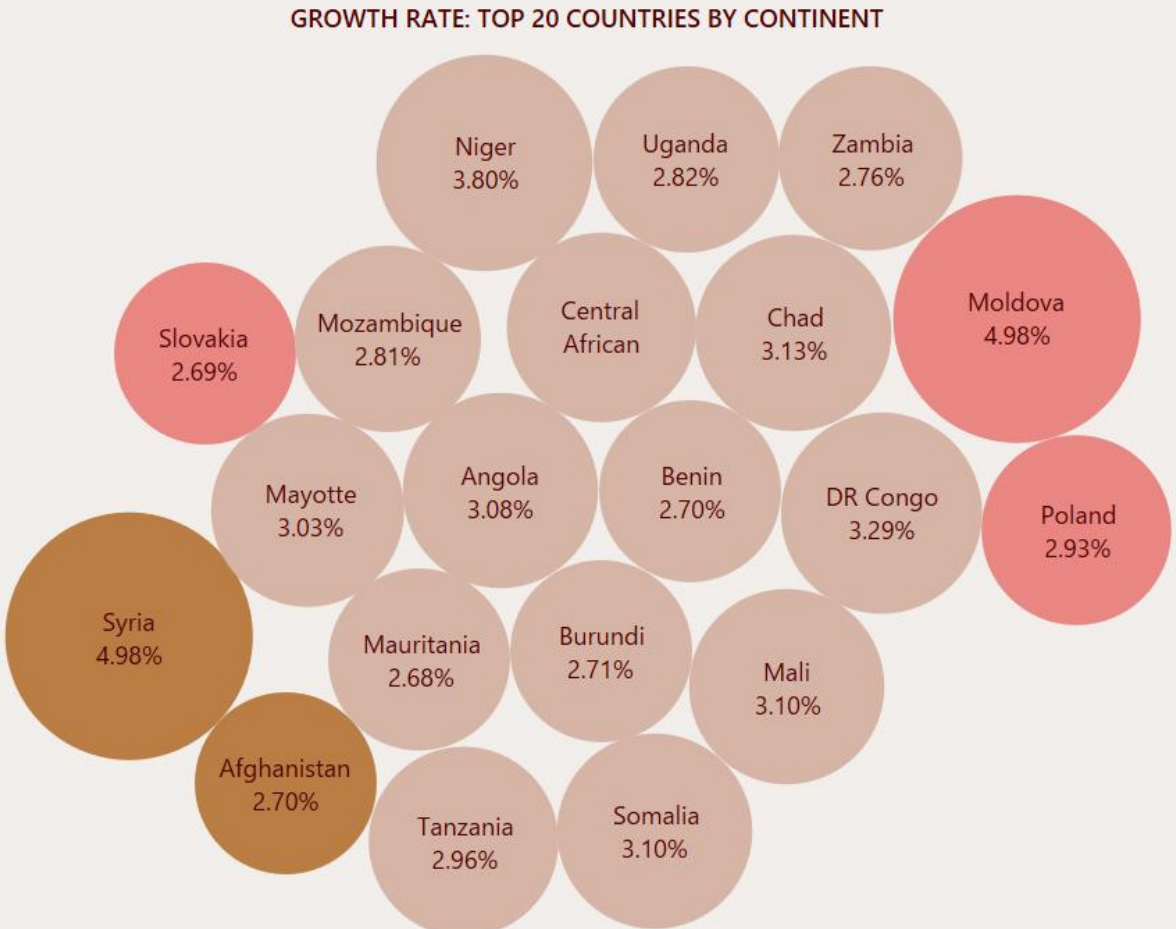
The chart above illustrates the percentage distribution of population from the year 1980 to 2050 across the top 9 countries, categorized by four hemispheres. It is evident from the graph that India and China have the highest populations among the selected countries, followed by the United States and Indonesia.

Visualize the Dynamic Population Changes in the Bottom 5 Countries Over the Years 1980 to 2050



The line chart above illustrates the population distribution of bottom 5 countries from the year 1980 to 2050 categorized by continents. It is evident from the graph that the population is growing for three countries, and it is decreasing for the two of them Falkland Islands and Saint Pierre and Miquelon.

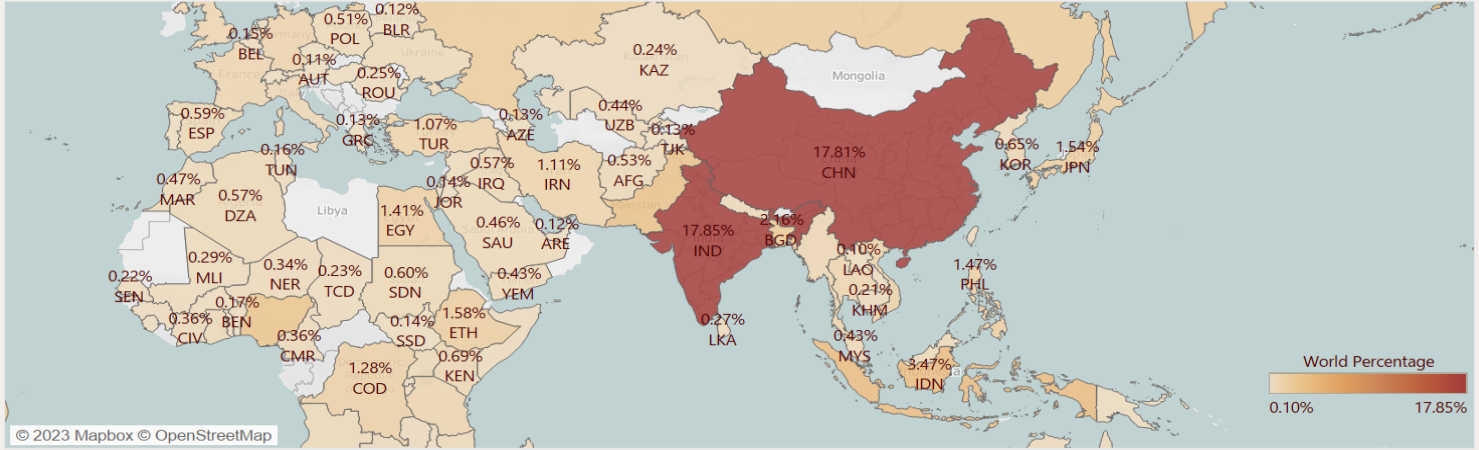
Comparing Growth Rates: Top 20 Countries by Continent



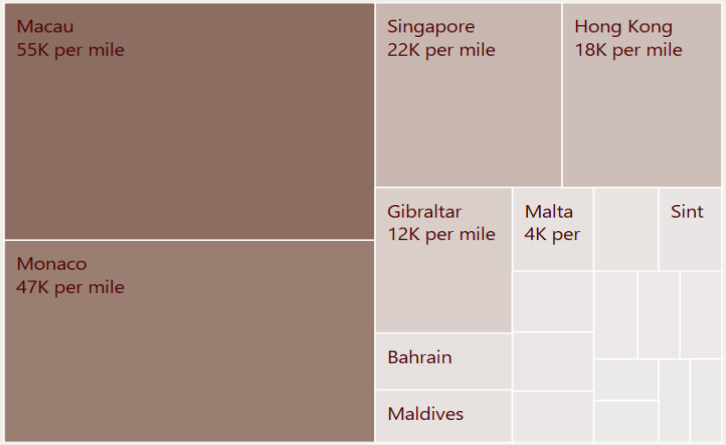
The chart presented above showcases the growth rates of the top 20 countries across different continents. It is evident from the graph that countries from the Asia and Europe continents exhibit the highest growth rates. Specifically, Syria and Moldova stand out with a growth rate of 4.98%, reflecting significant population growth in these countries.

DENSITY DISTRIBUTION

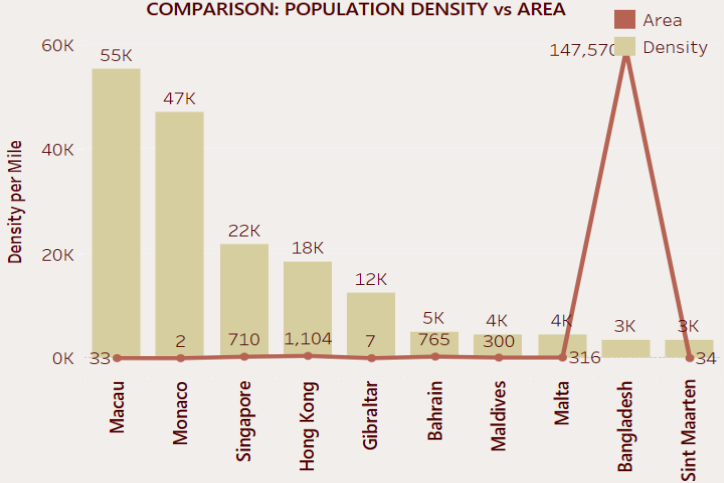
WORLD PERCENTAGE COVERAGE



POPULATION DENSITY DISTRIBUTION



COMPARISON: POPULATION DENSITY vs AREA

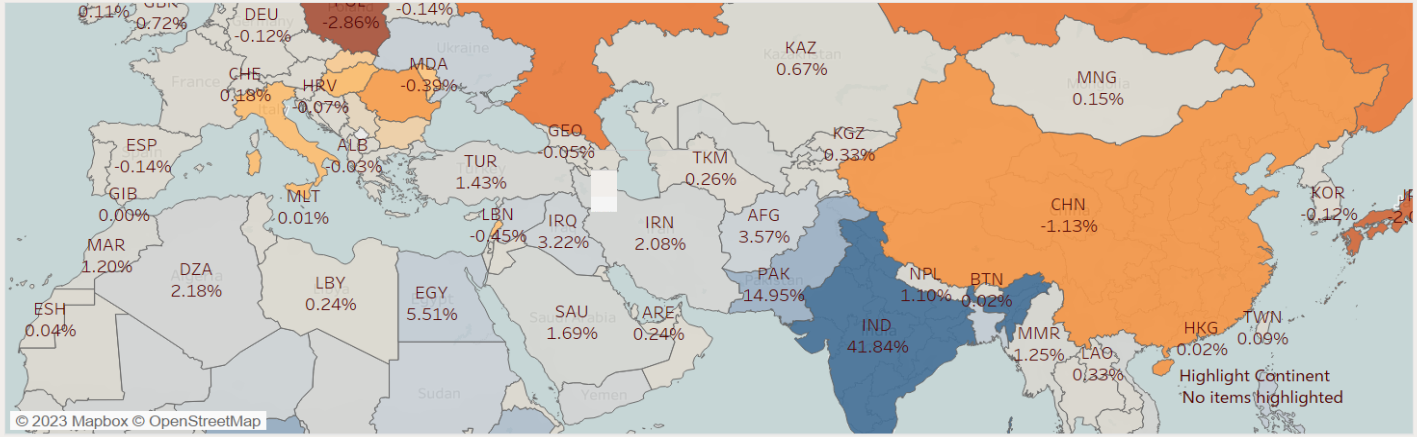


DEMOGRAPHIC SHIFTS AND TRENDS

COUNTRIES|CONTINENTS|HEMISPHERES

-2.86% 41.84%

NET CHANGE



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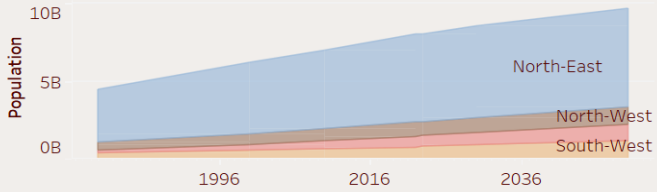
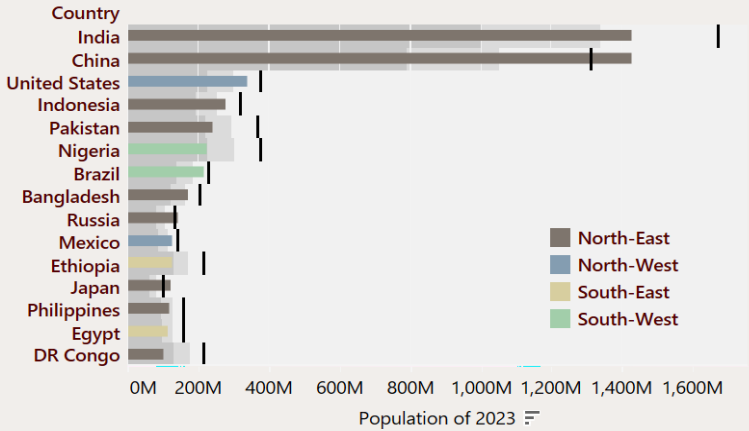
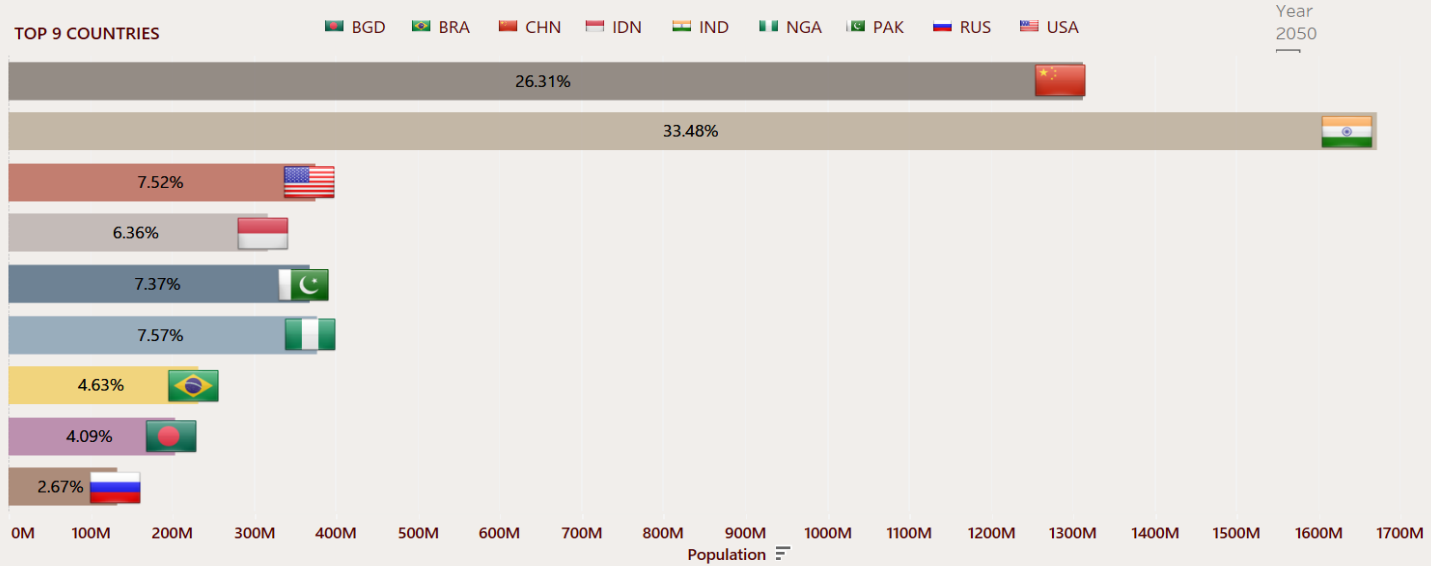
POPULATION CHANGE OVER TIME

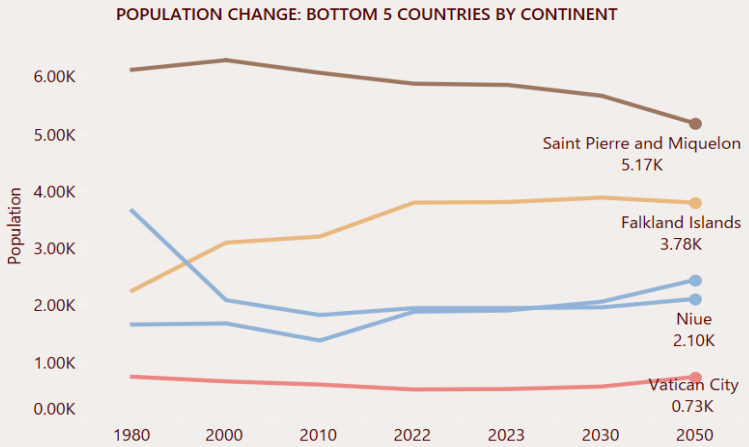


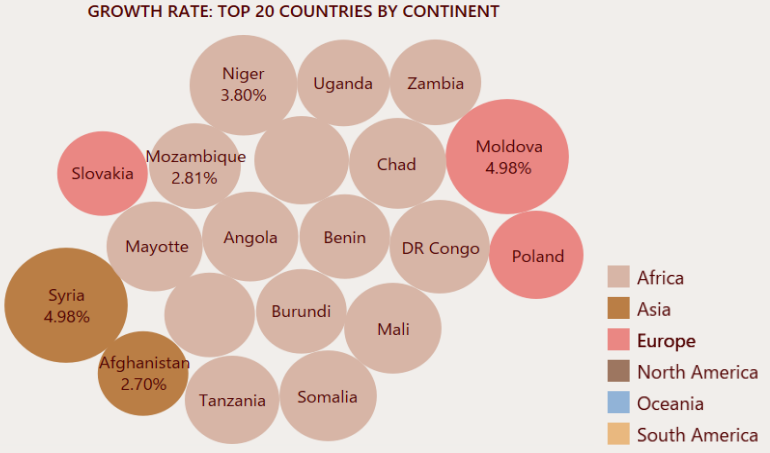
CURRENT AND EXPECTED POPULATION



POPULATION SHIFT (1980-2050)







CONCLUSION & SUMMARY

Our analysis reveals that **INDIA** and **CHINA** are the countries with the highest population worldwide. Furthermore, our findings indicate that the population of INDIA is projected to continue growing until 2050. Whereas the population of CHINA is anticipated to experience a decline during this period. These trends highlight the dynamic nature of population changes and have significant implications for the future demographics of these nations.

Our analysis of densities reveals that **MACAU** and **MONACO** stand out as the most densely populated countries. Despite their small land areas, these countries accommodate a high number of people, resulting in a significant population concentration within limited space.

Analyzing the net change in population across all countries. An observation from the analysis reveals that **INDIA** exhibits the highest percentage of net change, indicating significant net change in population. Conversely, **POLAND** display the lowest percentages of net change..

Analyzing percentage difference in population between the years 1980 and 2023 across different continents. It was observed that the **AFRICAN** continent exhibits the highest percentage difference, indicating a substantial change in population over the given period. Whereas **EUROPE** demonstrates the lowest percentage difference.

CONCLUSION & SUMMARY

Our analysis of population by hemispheres reveals that the North-East hemisphere has the highest population. This is primarily due to the presence of major countries like **CHINA** and **INDIA**, which contribute significantly to the population in this hemisphere. On the other hand, the other three hemispheres (North-West, South-East, and South-West) demonstrate approximately equal population sizes.

Based on our analysis of the data, we have determined that the **FALKLAND ISLANDS** and **TOKELAU** are the least populated countries globally. These countries have relatively small populations compared to other nations. Additionally, our findings suggest that the population of **FALKLAND ISLANDS** and **SAINT PIERRE and MIQUELON** is expected to decline over the given period.

It is evident from the analysis that countries from the **ASIA** and **EUROPE** continents exhibit the highest growth rates. Specifically, **SYRIA** and **MOLDOVA** stand out with a growth rate of 4.98%, reflecting significant population growth in these countries.


THANK YOU