National Telecommunication Institute

World Population Analysis

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1-Summery:

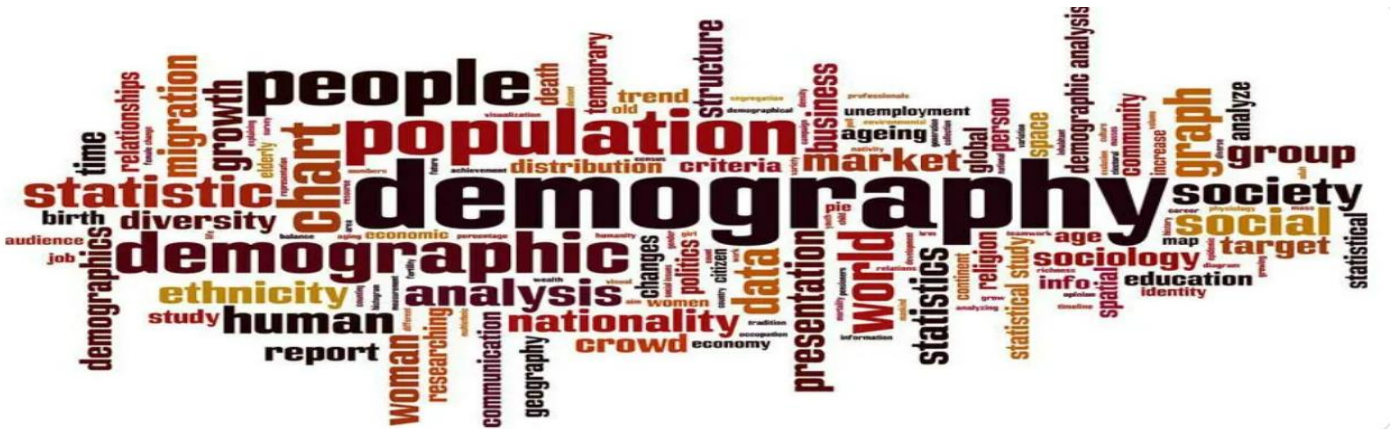
1. Global Population Dynamics Findings:

- **Top Populous Countries: China and India lead in population size, followed by the USA, Indonesia, Pakistan, and Brazil.**
- **Global Population Share: India and China dominate the global population share, followed by the USA and Indonesia.**
- **Population Density: Monaco ranks as the most densely populated country, followed by Gibraltar and Singapore. Bahrain, a Gulf country, is also among the top densely populated nations.**
- **Net Population Change (2023-2024): Yemen experienced the highest net population growth, followed by Angola and Syria. Notably, six out of the top countries with the highest net population change are Arab nations: Yemen, Syria, Somalia, South Sudan, UAE, and Oman.**

2-Demographic Patterns and Trends:

Key Findings:

1. **Age Groups: Adults dominate the population, with the highest percentage among the different age groups.**
2. **Top 3 Countries by Adult Percentage: All three are Arabian countries—Qatar (85.5%), UAE (81.77%), and Bahrain (77.83%).**
3. **Top 3 Countries by Kids Percentage: Liberia leads at 54.5%, followed by Guinea-Bissau and Burundi.**
4. **Top 3 Countries by Retired Percentage: Monaco is first at 36%, followed by Japan, with others closely behind.**
5. **Highest Median Age per Country: Monaco has the highest at 54 years, followed by Japan, with Italy and San Marino tied at 48 years.**
6. **Highest Fertility Rate: Shared by Mali, Chad, and Somalia, each at 18%.**
7. **Migration Analysis: Ukraine and the USA lead with over 1 million migrants, while Canada and the UK follow with 360k to 420k migrants.**
8. **Global Gender Ratio: There are slightly more males than females globally, with 101 males for every 100 females.**
9. **Top 3 Countries by Male Population: Qatar (76.5%), UAE (70%), Bahrain (62.2%).**
10. **Top 3 Countries by Female Population: Curaçao (54.7%), Latvia (54.3%), and Lithuania (54%).**



3-Land Insights:

Key Findings:

1. **Top Countries by Land Area: Russia leads with 16.4 million km², followed by China with 9.4 million km², and the USA with 9.15 million km².**
2. **World Mass by Country: Russia accounts for 11% of the world's landmass, followed by China at 6.3%, and the USA at 6.1%.**
3. **World Share Percentage: India ranks first at 17.78%, followed by China at 17.39%, and the USA at 4.23%. Algeria holds the 10th position at 0.6%.**
4. **Urban Area Percentage: San Marino and Sint Maarten both have 100% urban areas, followed by Belgium at 99% and the Cook Islands at 98%. Additionally, two Arabian countries—Oman and Qatar—are among the top countries by urban area percentage.**

Objective of the Report

The objective of this report is to provide a comprehensive analysis of global population dynamics, demographic patterns, and land insights using data from 2024. Through this analysis, the report aims to uncover key trends, identify significant correlations, and highlight the countries that stand out in various aspects such as population growth, density, urbanization, and land area distribution. The insights derived from this analysis will be presented through a series of visualizations and charts created using Excel, Power BI, and Tableau, offering a clear and detailed understanding of the current global landscape.

2-Introduction:

Purpose of the Analysis:

The purpose of this analysis is to gain a deeper understanding of global population trends, demographic shifts, and land distribution patterns by examining key metrics such as population size, growth rates, fertility rates, migration trends, and urbanization levels. By analyzing these factors across different countries, the analysis seeks to identify significant trends and correlations that can inform decision-making, policy development, and strategic planning at both national and global levels. The analysis also aims to provide insights into how different regions contribute to global demographics and land usage, helping to highlight areas of potential growth, challenges, and opportunities for sustainable development.

b. Analysis Methodology

i. Data Collection

To ensure the highest quality data, an extensive search was conducted across various websites and data banks to find the most reliable sources. The primary objective of this research was to analyze global population data and derive meaningful insights. Key parameters such as population, country, and other relevant metrics were chosen to cover three main topics: Population Dynamics, Demographics, and Land Insights.

The actual data collection process was executed using Python scripts that performed web scraping across multiple websites. The scraped data was then stored in CSV files as data frames, ready for the next steps of cleaning and preprocessing.

ii. Data Cleaning and Preprocessing

The data cleaning and preprocessing were carried out using a combination of Python scripts and Excel. The process involved removing null values, eliminating duplicates, correcting data types, and filling in missing values using methods like mean, median, and mode. Additionally, column names were standardized across all datasets to ensure consistency.

iii. Tools Used

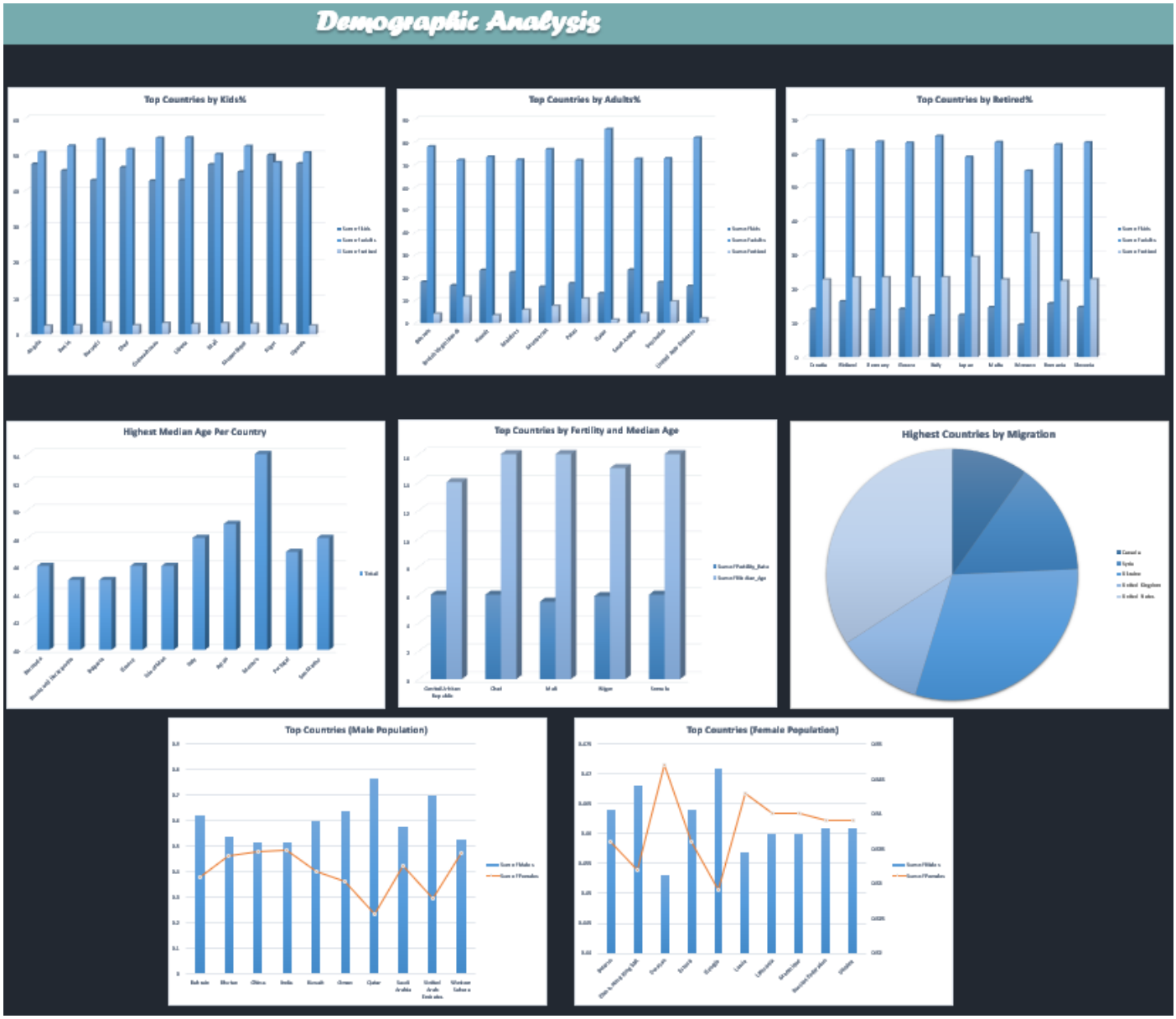
MySQL and MySQL Workbench were employed as the database repository for storing and querying the data. The cleaned and preprocessed data were then utilized in Power BI, Tableau, and Excel to generate insights, measures, and visually appealing dashboards.

3-Global Population Dynamics:

Summary: Global Population Dynamics

China and India remain the most populous countries, significantly contributing to the world's population share. Monaco leads in population density, with Bahrain being the most densely populated Gulf nation. Yemen has seen the highest net population growth from 2023 to 2024, with six Arab countries featuring prominently in global population growth.

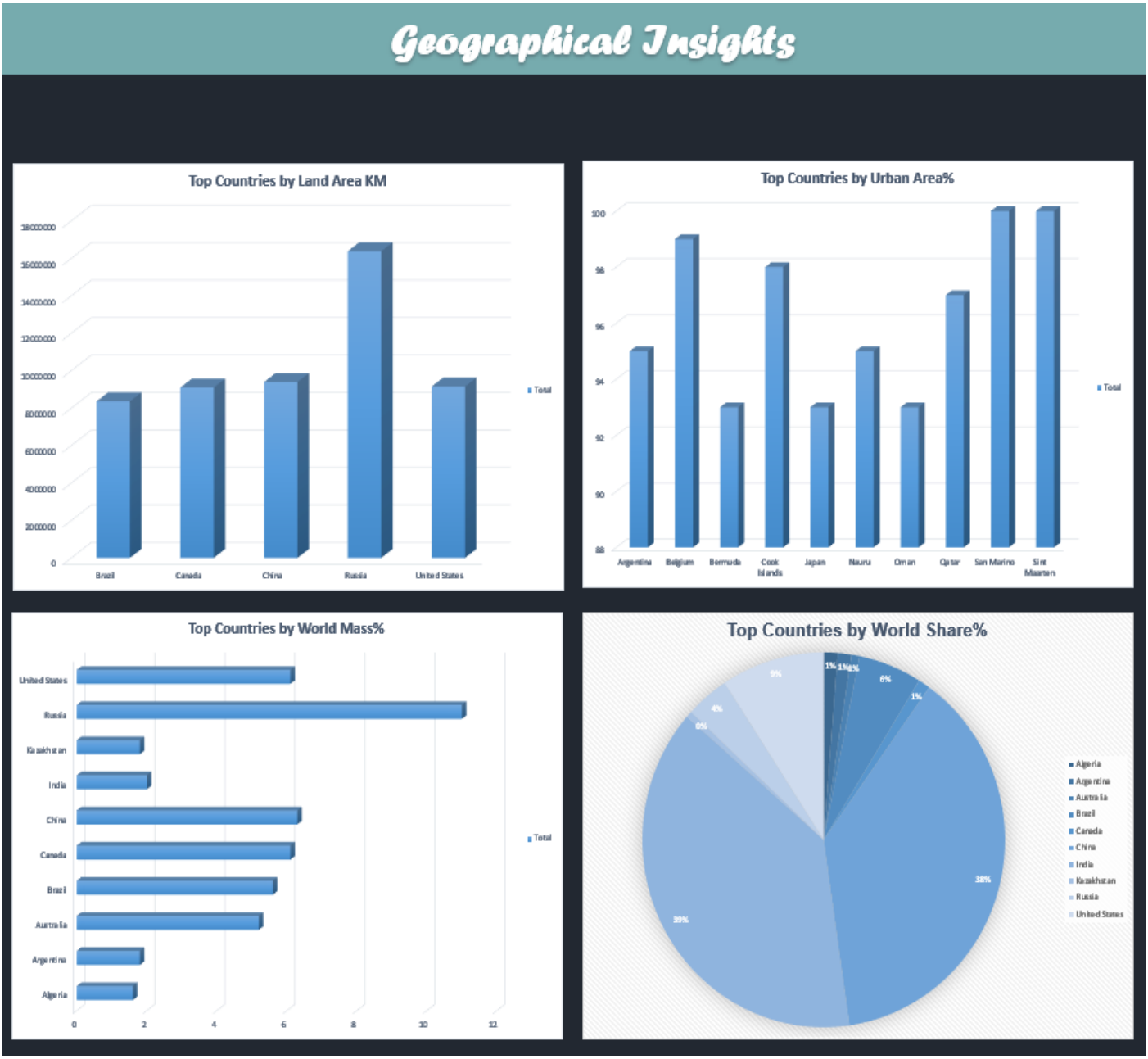
4-Demographics Patterns and trends:



Summary: Demographic Patterns and Trends:

Adults dominate globally, with Arabian nations like Qatar, UAE, and Bahrain having the highest percentages. Liberia leads in child population, while Monaco tops in retirees and median age. Mali, Chad, and Somalia have the highest fertility rates. Migration is prominent in Ukraine and the USA, and the global gender ratio slightly favors males. Qatar, UAE, and Bahrain have the highest male populations, while Curaçao, Latvia, and Lithuania have the highest female populations.

5-Land Insights:



Summary: Land Insights:

Russia, China, and the USA are the top three countries by land area, with Russia holding 11% of the world's landmass. India has the highest world share percentage, followed by China and the USA. San Marino and Sint Maarten are fully urbanized, with Belgium and the Cook Islands also having high urban area percentages. Oman and Qatar are notable for their high urbanization rates.

6-Conclusion:

Final Thoughts

The analysis of global population dynamics, demographics, and land insights reveals significant patterns and trends. China and India are central to global population distribution, while Monaco and other small states highlight extreme cases of density and median age. Urbanization is a major trend, with some countries achieving near-total urbanization. Understanding these dynamics provides valuable context for global development, policymaking, and resource management.

Potential Future Research Areas

1. **Impact of Urbanization: Investigate how rapid urbanization affects:**
    - **Infrastructure: Assess the strain on transportation, housing, and utilities in highly urbanized regions.**
    - **Quality of Life: Explore changes in living conditions, access to amenities, and overall well-being.**
    - **Environmental Sustainability: Examine the ecological footprint of urban expansion and its impact on natural resources.**
2. **Aging Populations: Explore the socio-economic implications of aging populations, focusing on:**
    - **Healthcare: Analyze the demand for healthcare services and the challenges in providing adequate care for an aging population.**
    - **Average Wage: Investigate how aging demographics influence labor markets, wage structures, and employment opportunities.**
    - **Total Income: Study the effects of an aging population on national income levels, pension systems, and economic growth.**
    - **Obesity Trends: Examine the relationship between aging and obesity rates, and how obesity impacts overall health and healthcare costs.**

7-Refrences:

https://www.worldometers.info/world-population/population-by-country/

https://www.worldometers.info/geography/largest-countries-in-the-world/

https://en.wikipedia.org/wiki/List_of_countries_by_age_structure

https://www.worldometers.info/world-population/world-population-by-year/

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