Tracing the Growth of the Global Community: A Population Forecasting Analysis

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CONTENT

1. INTRODUCTION

1.1 OVERVIEW

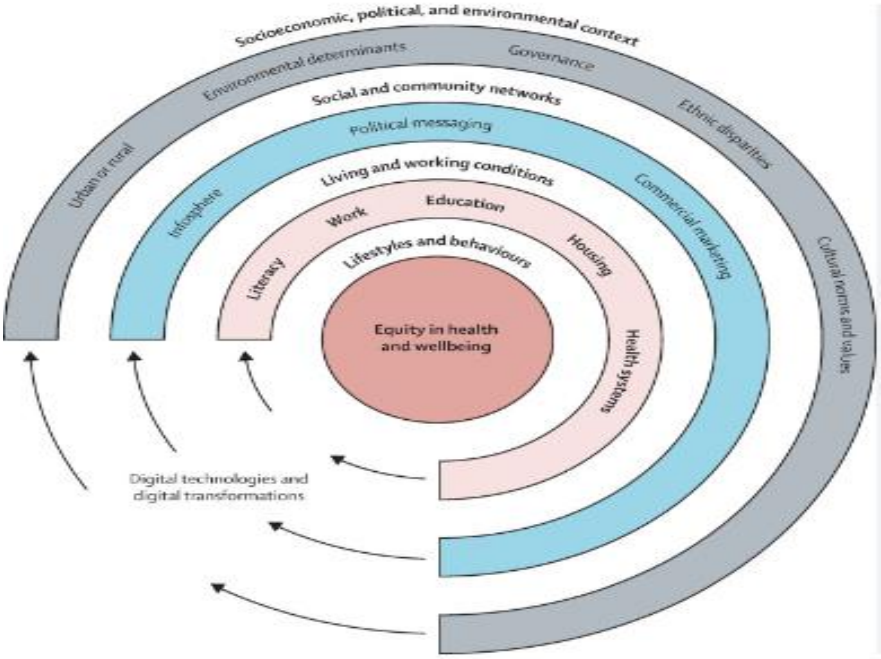
The world's population is more than three times larger than it was in the mid-twentieth century. The global human population reached 8.0 billion in mid-November 2022 from an estimated 2.5 billion people in 1950, adding 1 billion people since 2010 and 2 billion since 1998. The world's population is expected to increase by nearly 2 billion persons in the next 30 years, from the current 8 billion to 9.7 billion in 2050 and could peak at nearly 10.4 billion in the mid-2080s. This dramatic growth has been driven largely by increasing numbers of people surviving to reproductive age, the gradual increase in human lifespan, increasing urbanization, and accelerating migration. Major changes in fertility rate have accompanied this growth. These trends will have far-reaching implications for generations to come.

1.2 PURPOSE

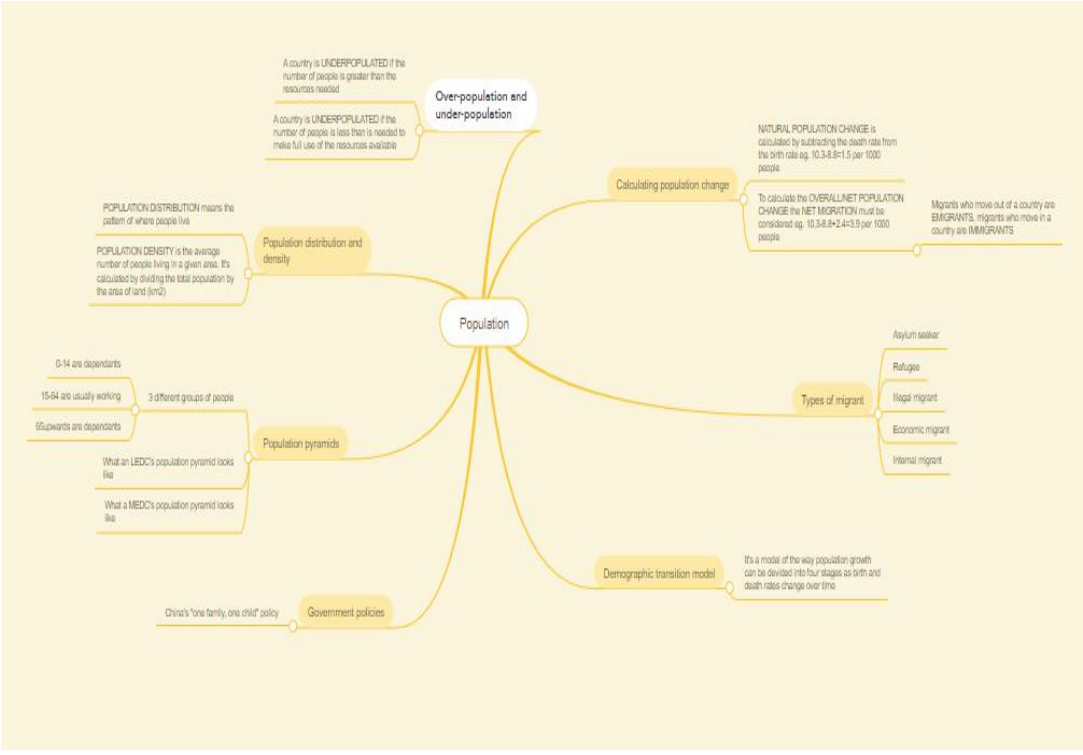
The Department of Economic and Social Affairs of the United Nations Secretariat is a vital interface between global policies in the economic, social and environmental spheres and national action. The Department works in three main interlinked areas: (i) it compiles, generates and analyses a wide range of economic, social and environmental data and information on which States Members of the United Nations draw to review common problems and take stock of policy options; (ii) it facilitates the negotiations of Member States in many intergovernmental bodies on joint courses of action to address ongoing or emerging global challenges; and (iii) it advises interested Governments on the ways and means of translating policy frameworks developed in United Nations conferences and summits into programmers at the country level and, through technical assistance, helps build national capacities.

2. PROBLEM DEFINITION & DESIGN THINKINNG

2.1 EMPATHY MAP

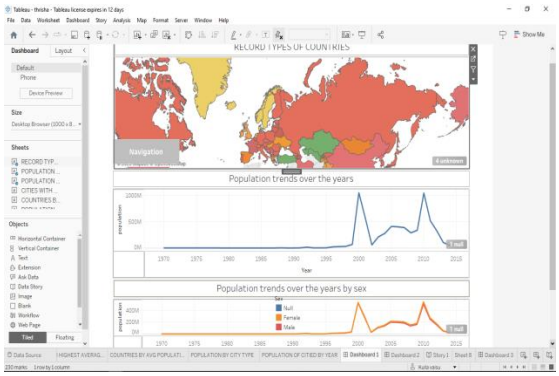


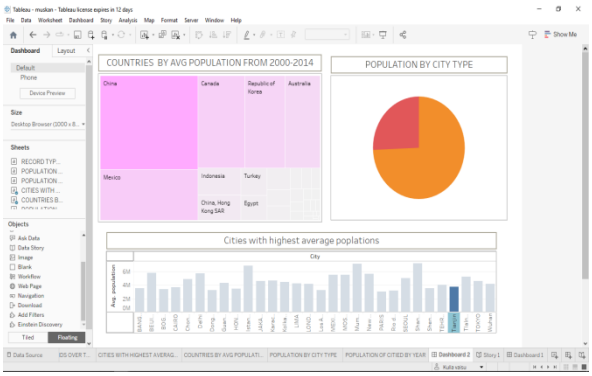
2.2 IDEATION ORBRAINSTROMING MAP



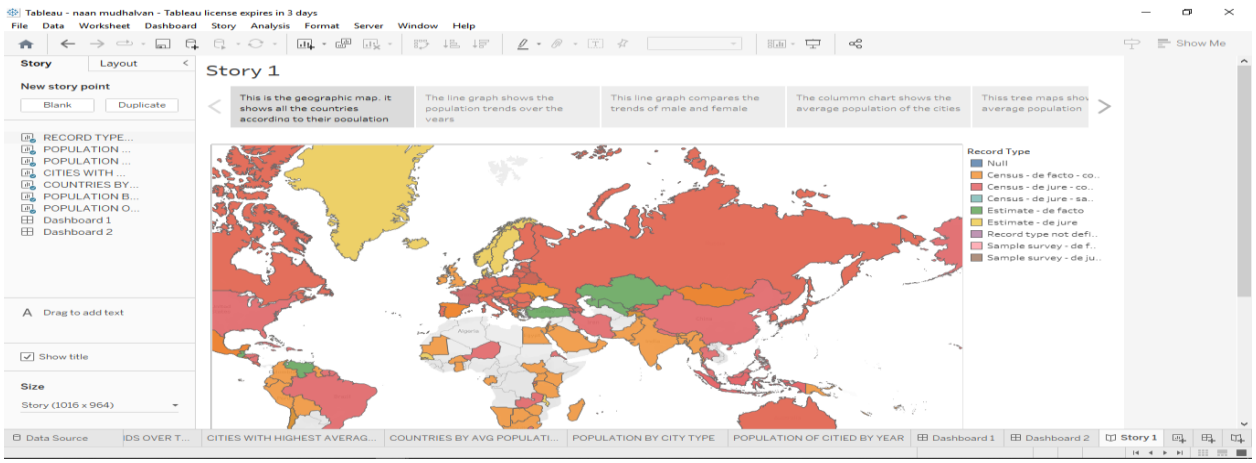
3. RESULT

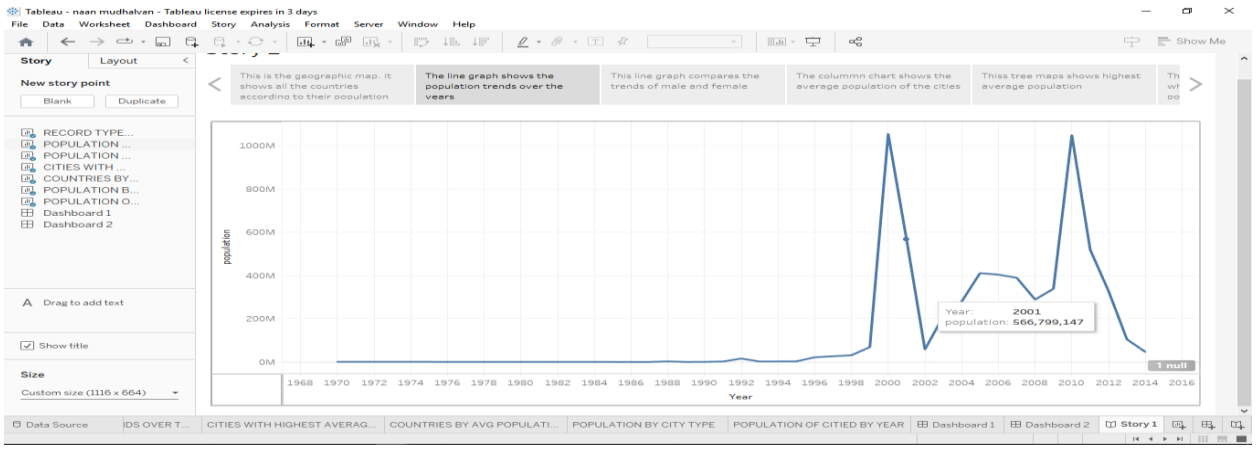
3.1 DASHBOARD





3.2 STORY





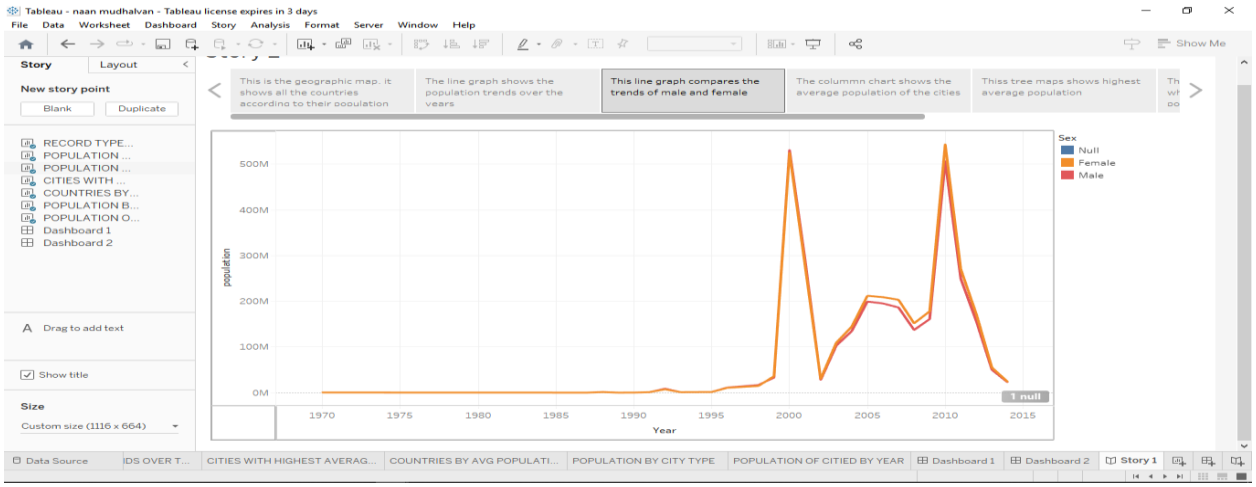
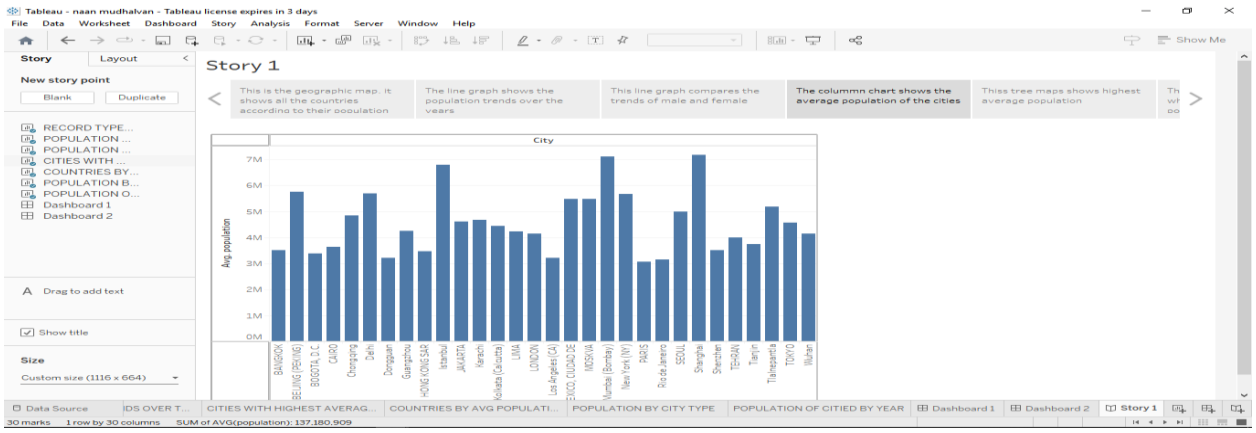


Tableau - naan mudhalvan - Tableau license expires in 3 days
File Data Worksheet Dashboard Story Analysis Format Server Window Help
Story
Layout
New story point
Blank
Duplicate
RECORD TYPE...
POPULATION ...
POPULATION ...
CITIES WITH ...
COUNTRIES BY...
POPULATION B...
POPULATION O...
Dashboard 1
Dashboard 2
Drag to add text
Show title
Size
Custom size (1116 x 664)
This is the geographic map. it shows all the countries according to their population
The line graph shows the population trends over the years
This line graph compares the trends of male and female
The columnn chart shows the average population of the cities
Thiss tree maps shows highest average population
Sex
Null
Female
Male
population
500M
400M
300M
200M
100M
0M
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
Year
1 null
Data Source
CITIES WITH HIGHEST AVERAG...
COUNTRIES BY AVG POPULATI...
POPULATION BY CITY TYPE
POPULATION OF CITIED BY YEAR
Dashboard 1
Dashboard 2
Story 1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File Data Worksheet Dashboard Story Analysis Format Server Window Help
Story 1
City
Avg population
7M
6M
5M
4M
3M
2M
1M
0M
BANGKOK
BEIJING (PEKING)
BOGOTA, D.C.
CAIRO
Chongqing
Delhi
Dongguan
Guangzhou
HONG KONG SAR
Istanbul
JAKARTA
Karachi
Kolkata (Calcutta)
LIMA
LONDON
Los Angeles (LA)
MEXICO CIUDAD DE
MOSKVA
Mumbai (Bombay)
New York (NY)
PARIS
Rio de Janeiro
SEOUL
Shanghai
Shenzhen
TEHRAN
Tianjin
Thaneesantla
TOKYO
Wuhan
30 marks
1 row by 30 columns
SUM of AVG(population): 137,180,909

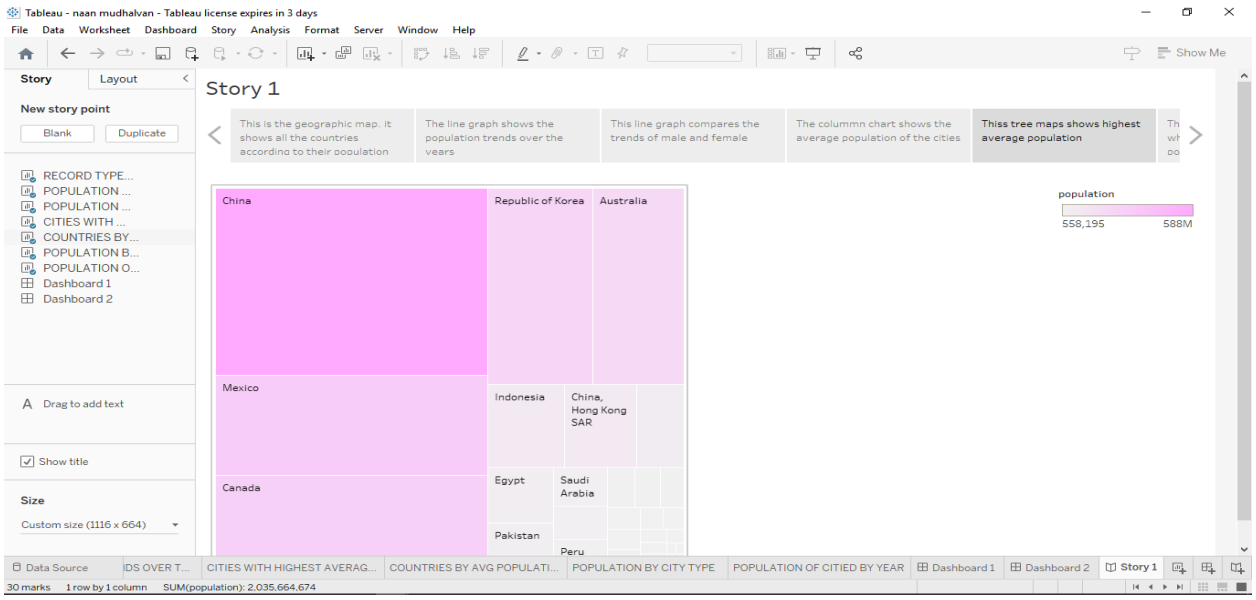
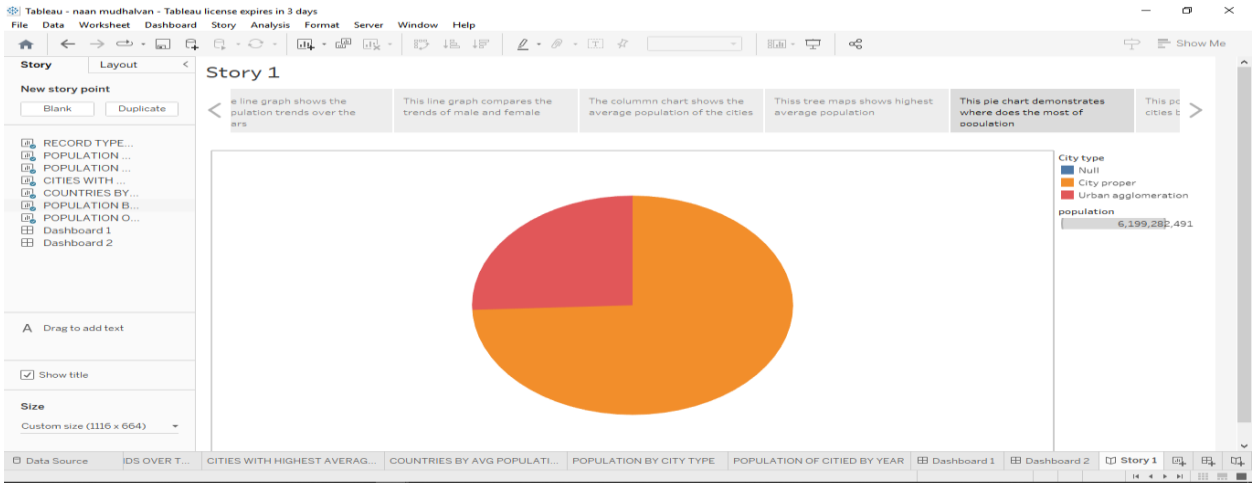
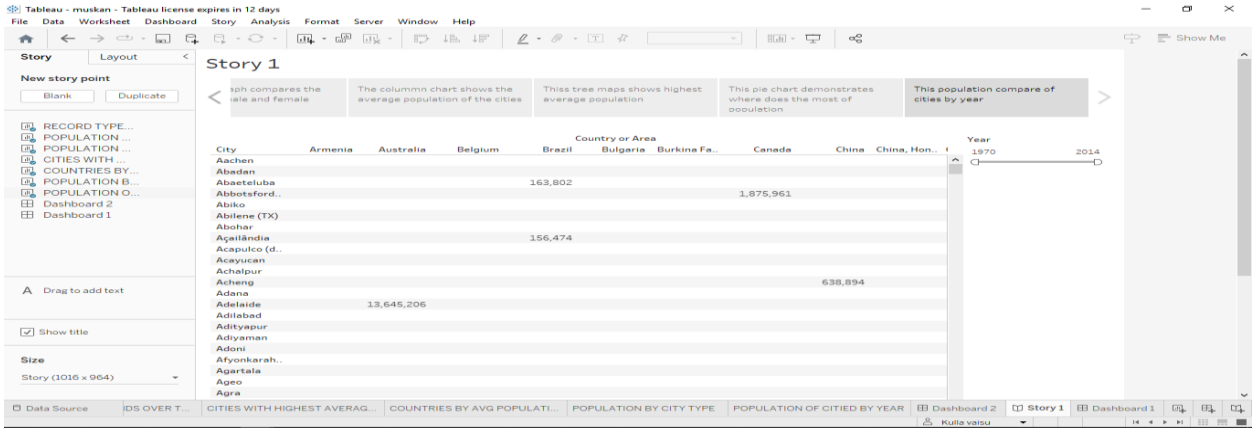
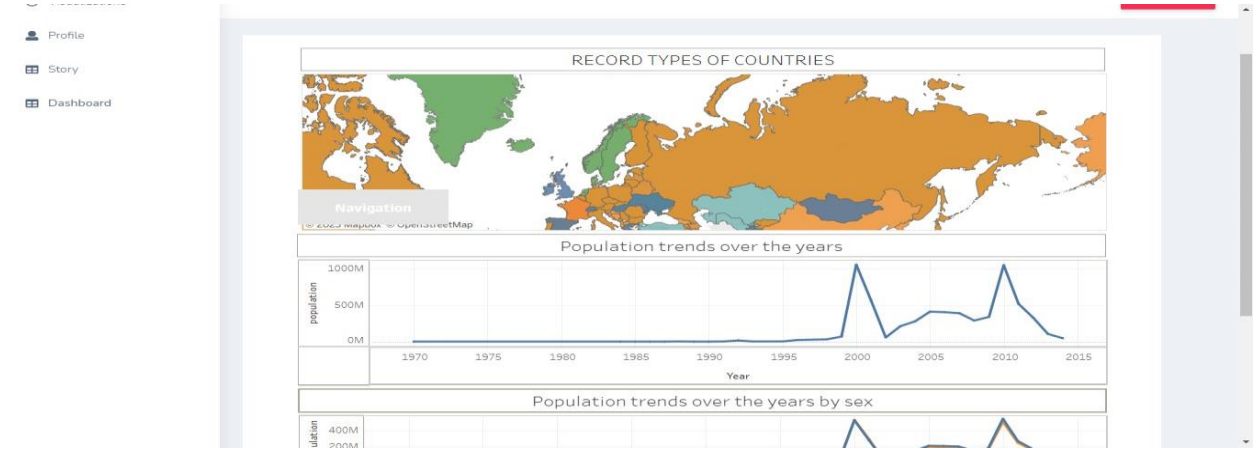


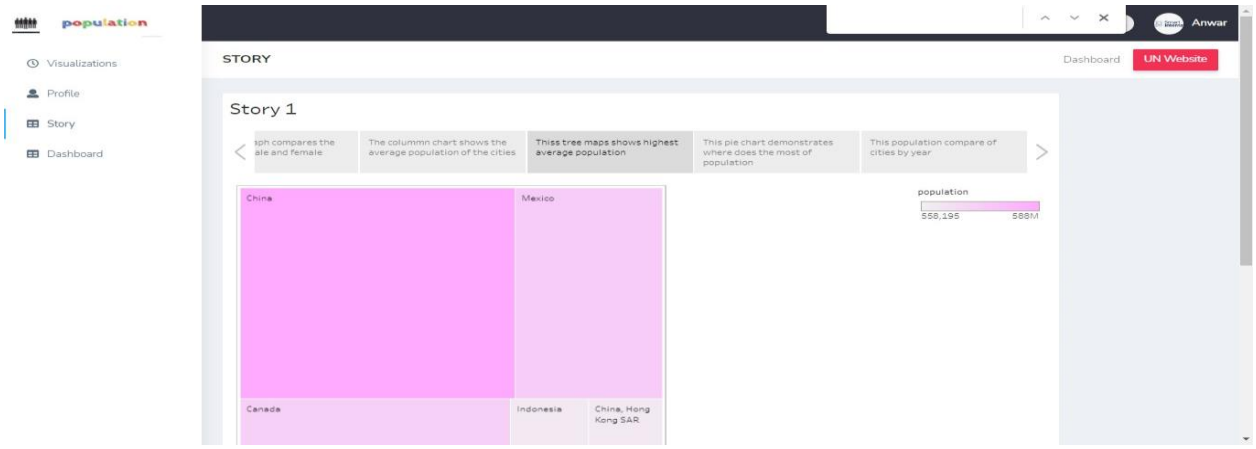
Tableau - naan mudhalvan - Tableau license expires in 3 days
File Data Worksheet Dashboard Story Analysis Format Server Window Help
Story 1
China
Republic of Korea
Australia
Mexico
Indonesia
China, Hong Kong SAR
Canada
Egypt
Saudi Arabia
Pakistan
Peru
population
558,195
588M
30 marks
1 row by 1 column
SUM(population): 2,035,664,674





3.3 WEB INTEGRATION





4. ADVANTAGE & DISADVANTAGE

ADVANTAGE OF POPULATION GROWTH

1. More people lead to greater human capital. If there are more people, the probability of finding a genius like Einstein, Marie Curie, Beethoven increase. These exceptional people can lead to technological and cultural masterpieces which enrich our lives. The past 200 years have shown exponential growth in technical development and innovation. There are many factors behind this, but the world's growing population means we have a bigger pool of human capital and the possibility of these cutting edge discoveries increases.

2. Higher economic growth. Population growth will lead to economic growth with more people able to produce more goods. It will lead to higher tax revenues which can be spent on public goods, such as health care and environmental projects.

- The obvious evaluation is to say, the crucial thing is not GDP, but GDP per capita. If economic growth is at the same rate as population growth, average living standards will not increase. However, it is possible population growth can also improve per capita incomes. As the population increases, the economy can benefit from a bigger talent pool, economies of scale and greater specialization. All this can enable higher per capita income, which we have seen in major developed economies.

3. Economies of scale. Farming and industry have been able to benefit from economies of scale, which means as the population grows; food output and manufacturing output have been able to grow even faster than population growth. For example, at the turn of the nineteenth century, Thomas Malthus predicted population growth would lead to famine as we would be unable to feed the

growing population. However, his dire predictions failed to materialize because he failed to understand, that the productivity of land, labor and capital could all increase more than proportionately. 300 years ago, most of the population worked on the land. Technological innovation and economies of scale, mean productivity of land has vastly increased as farmers make use of mechanization and economies of scale for increased food production.

DISADVANTAGE OF POPULATION GROWTH

1. Cost to the environment. Population growth exacerbates many of the existing environmental problems

- Trying to reduce carbon and methane emissions to reduce global warming is relatively more difficult as the population.
- There will be greater threat on natural habitats as a greater population has greater demand for housing and farmland. This will increase pressure to cut down forests to make way for farming and housing.
- Higher population will lead to a greater consumption of non-renewable resources, leading to a faster depletion of natural resources.
- Higher population will lead to greater pollution levels in air, water and land. Higher pollution is associated with a range of health issues, such as cancer and asthma. The pollution also harms animals and plants.
- Soil degradation. To feed a growing planet, we have seen serious degrading of farmland (according to UN estimates) about 12 million hectares of farmland every year. This is due to factors, such as overgrazing, use of chemicals, climate change and use of chemicals.

2. Congestion. Too many people in a small space will lead to various types of congestion. Road congestion is a major problem across the world. One study suggested congestion cost the EU €111bn (1% of GDP) in 2012. With population growth, the costs of congestion will only increase leading to time lost, more pollution and lost output.

3. Water shortages. Already up to 40% of the world's population faces water scarcity and the risk of drought. According to the UN water shortages could lead to 700 million people at the risk of displacement. A growing population will put pressure on scarce water supplies and this is a factor behind many minor and major conflicts with countries having to find ways around the shortage of water.

4. Generating unsustainable waste. We are currently generating non-biodegradable rubbish that we are struggling to process. It tends to end in landfill, causing methane emissions and other toxic problems.

5. APPLICATIONS

The UN publishes several variants of their population projections:

- The **Medium Variant** is the projection that the UN researchers see as the most likely scenario. This is the source of the majority of projections shown here.
- The **High-** and **Low-Variants** are based on the Medium Variant and simply assume that the total fertility rates in each country are 0.5 higher and 0.5 lower than the Medium variant by the end of this century in every country.[10]
- The **Constant Fertility Scenario** is an illustrative scenario that plays out how the world population would change if fertility rates remained constant. It is obviously not intended to be a realistic scenario.

6. CONCLUSION

The world's population continues to grow, but the pace of growth is slowing down

- The world's population is projected to reach 8 billion on 15 November 2022.
- The latest projections by the United Nations suggest that the global population could grow to around 8.5 billion in 2030, 9.7 billion in 2050 and 10.4 billion in 2100.
- Population growth is caused in part by declining levels of mortality, as reflected in increased levels of life expectancy at birth. Globally, life expectancy reached 72.8 years in 2019, an increase of almost 9 years since 1990. Further reductions in mortality are projected to result in an average longevity of around 77.2 years globally in 2050.
- Life expectancy at birth for women exceeded that for men by 5.4 years globally, with female and male life expectancies standing at 73.8 and 68.4, respectively. A female survival advantage is observed in all regions and countries, ranging from 7 years in Latin America and the Caribbean to 2.9 years in Australia and New Zealand.
- Following a drop in mortality, population growth continues so long as fertility remains at high levels. When fertility begins to fall, the annual rate of growth starts to drop.
- In 2021, the average fertility of the world's population stood at 2.3 births per woman over a lifetime, having fallen from about 5 births per woman in 1950. Global fertility is projected to decline further to 2.1 births per woman by 2050.

- In 2020, the global growth rate fell under 1 per cent per year for the first time since 1950. The world's population is projected to reach a peak of around 10.4 billion people during the 2080s and to remain at that level until 2100.
- Two-thirds of the projected increase in global population through 2050 will be driven by the momentum of past growth that is embedded in the youthful age structure of the current population. Such growth would occur even if childbearing in today's high-fertility countries were to fall immediately to around two births per woman.
- Given that most population increase until 2050 will be driven by the momentum of past growth, further actions by Governments aimed at reducing fertility would do little to slow the pace of growth between now and mid-century, beyond the gradual slowdown indicated by the projections presented here. Nevertheless, the cumulative impact of such changes could contribute to a more substantial reduction of global population growth in the second half of the century.
- Sustained high fertility and rapid population growth present challenges to the achievement of sustainable development. The necessity of educating growing numbers of children and young people, for example, draws resources away from efforts to improve the quality of education.
- For countries with continuing high levels of fertility, achieving the Sustainable Development Goals (SDGs), particularly those related to health, education and gender, is likely to hasten the transition towards lower fertility and slower population growth.

7. FUTURE SCOPE

Green Revolution: Green Revolution refers to a series of research, development, and technology transfer initiatives, occurring between the 1940s and the late 1970s, which increased agriculture production around the world, beginning most markedly in the late 1960s

- **Birth rates**: The birth rate is typically the rate of births in a population over time. The rate of births in a population is calculated in several ways: live births from a universal registration system for births, deaths, and marriages; population counts from a census, and estimation through specialized demographic techniques.
- **forecast**: An estimation of a future condition

Forecasts try to estimate the rate of population growth, but this is understandably difficult to predict. For example, the UN has issued multiple projections of future world population, based on different assumptions. From 2000

to 2005, the UN consistently revised these projections downward, until the 2006 revision, issued on March 14, 2007, revised the 2050 mid-range estimate upwards by 273 million. The UN now estimates that, by 2050, world population will reach 9 billion people. However, this forecast, like all population forecasts, is subject to change.

Population growth is difficult to predict because unforeseen events can alter birth rates, death rates, migration, or the resource limits on population growth. Birth rates may decline faster than predicted due to increased access to contraception, later ages of marriage, and the growing desire of many women in such settings to seek careers outside of child rearing and domestic work, and the decreased economic "utility" of children in industrialized settings. Countries may also choose to undertake mitigation measures to reduce population growth. For example, in China, the government has put policies in place that regulate the number of children allowed to each couple. Other societies have already begun to implement social marketing strategies in order to educate the public on overpopulation effects. Certain government policies are making it easier and more socially acceptable to use contraception and abortion methods.

Such policies could have a significant effect on global fertility rates. Worldwide, nearly 40% of pregnancies are unintended (some 80 million unintended pregnancies each year). An estimated 350 million women in the poorest countries of the world either did not want their last child, do not want another child or want to space their pregnancies, but they lack access to information, affordable means and services to determine the size and spacing of their families. In the United States, in 2001, almost half of pregnancies were unintended. Fertility rates could be significantly reduced by providing education about overpopulation, family planning, and birth control methods, and by making birth-control devices like male/female condoms, pills, and intrauterine devices easily available. At the same time, other countries may roll back access to contraception, as has happened recently in Afghanistan. Or they may implement pro-fatalist policies, like those seen in much of Europe where governments are concerned with sub-replacement fertility. Any of these changes could affect fertility rates and therefore alter forecasts of population growth.