

# TRACING THE GROWTH OF THE GLOBAL COMMUNITY-A POPULATION FORECASTING ANALYSIS

## INTRODUCTION:

A population is defined as a group of individuals of the same species living and interbreeding within a given area. A population projection gives a picture of what the future size and structure of the population by sex and age might look like. It is based on knowledge of the past trends, and, for the future, on assumptions made for three components: fertility, mortality and migration. The population forecasting methods require the values of present and past population records to undergo the calculation. The local census records of a particular area provide the value of present and past populations. 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.

It is calculated by dividing the number of people added to a population in a year (Natural Increase + Net In-Migration) by the population size at the start of the year. If births equal deaths and there is zero net migration, the growth rate will be zero.

In Western civilization, increased knowledge and application of science and technology has over the last 150 years sharply decreased the death rate. During this period, the birth rate has also been lowered, mainly through the practice of birth control. Since the birth rate decreased more slowly than the death rate, a large increase in population took place in the Western world in the 19th and 20th centuries. In the most industrialized countries the death rate today has almost reached the present biological minimum, but since birth rates also continue to fall, population increase is being slowed. North western, southern and central Europe, North America, Australia and New Zealand are among these countries which are identified as having a population of incipient decline.

In those countries which are undergoing the process of industrialization, the application of modern hygiene methods such as more widespread use of medical facilities and D. D. T., have decreased the death rate. The lowering of the death rate precedes the lowering of the birth rate, and consequently these countries are now undergoing or have undergone a very large population increase. These countries are said to be in the stage of transitional growth, and countries such as the Soviet Union, Japan and some Latin American countries are in the midst of this stage of population change while Turkey, Palestine and parts of North Africa seem to be entering it.

There are also a number of countries which are not yet industrialized to any great extent, such as China, India, Egypt, the Near East, and most of South and Central America, which have at present both a high birth rate and a high death rate, which prevents any large population increase. These countries are characterized as being of high growth potential since rapid growth may be expected as soon as technological developments make possible a decline in mortality.<sup>1</sup> Generalizations about the United States, with its present low birth and low death rate, have been made which forecast an increasing population of older persons in the population, an increasing number of future births from the low-income groups and from particular ethnic, social and religious groups, and from rural populations. The United States has been identified as a country of incipient population decline since it is felt that with an increase in families of small size (with few or no children) the population will not reproduce itself. The age-sex pyramid, which charts the number of people by age groupings and sex is a useful tool for describing population characteristics, and, when used comparatively, for showing population change. (See Appendix A for examples of age-sex pyramids.)

Although the United States as a whole is classified as one of incipient decline, there are sections of the country (such as rural areas and neighbourhoods of foreign-born in urban areas) where the birth rate is still quite high, and sanitation facilities, diet, etc., are deficient enough to keep the death rate above the national average. Infancy death rates are high, and the life expectancy (the average number of years a person may expect to live) may be five, ten or more years below the national figure.

The planner must be cognizant of the historical trend discussed briefly above. He must also be aware of the many different socio-economic groups present locally and in the nation. These groups have differing population reproduction and death rates, and also have with differing population "habits" — different attitudes about getting married, when to get married, when to have children, how to space them, and how many to have.<sup>2</sup> They have differing ideas (and also pressures upon them) about moving, both within and between communities.

There are a number of over-all generalizations which show differences in population habits. It is known for instance that the size of family generally varies inversely with income and education, that low income groups have more children than high income groups, that farm families are larger than city ones, and that most families of foreign birth (perhaps not so much because they are foreign, as because they often have low incomes) have more children than native born people. In general, Catholic families in the United States have tended to have more children than those of most Protestant denominations. Although these generalizations have been valid, it does not mean that they will always apply. It is being noticed today, for instance, that some persons in professional occupations (who have been among those with the least children) now seem to be favouring larger families; the same is true of some high-income groups. The trend of urban migration out to the suburbs and dormitory towns seems also to encourage larger families in these "fringe" areas.

## **RESULTS:**

We are creating to empathy map and brainstorm depends on what got us the project like dashboards and stories. We formed bar diagram, pie chart, funnel charts using population forecasting area, city, city type, country or area, record type reliability, sex, source year, value footnotes, year, measure names, population. To analysis the increase and decrease of population forecasting.

## **EMPATHY MAP CANVAS:**

An empathy map is a simple, easy-to-digest visual that captures knowledge about a user's behaviour and attitudes. It is a useful tool to help teams better understand their users. Creating an effective solution requires understanding the true problem and the person who is experiencing it. The exercise of creating the map helps participants consider things from the user's perspective along with his or her goals and challenge

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## **Brainstorm & Idea Prioritization Template:**

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions. Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room. Brainstorm & Idea Prioritization Template:

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[illegible]

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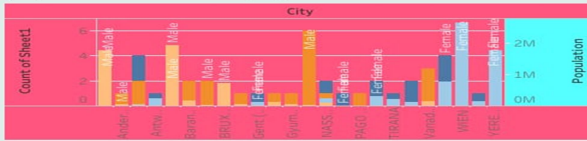
The collage displays a variety of project management and productivity templates, all designed in a clean, modern style with a color palette of blue, yellow, and orange. The templates include:

- Brainstorm & Idea Prioritization:** A template for brainstorming ideas and prioritizing them based on effort and impact.
- Meeting Agenda:** A template for organizing a meeting agenda, including topics, time slots, and participants.
- Kanban Board:** A template for visualizing work items as cards moving through different stages of a workflow.
- Gantt Chart:** A template for visualizing project tasks and their durations over time.
- Meeting Notes:** A template for taking structured meeting notes, including a purpose, agenda, and action items.
- Project Charter:** A template for defining the purpose, scope, and key stakeholders of a project.
- SWOT Analysis:** A template for analyzing the strengths, weaknesses, opportunities, and threats of a project or organization.
- Stakeholder Map:** A template for mapping the relationships and influence of various stakeholders.
- Project Risk Register:** A template for identifying, assessing, and mitigating project risks.
- Project Dashboard:** A template for providing a high-level overview of project status and key metrics.

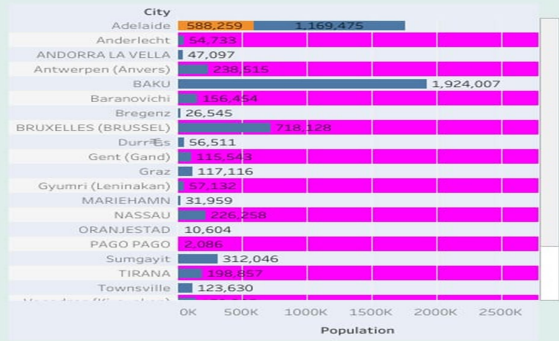
## Dashboard and stories of population forecasting:

## POPULATION FORECASTING

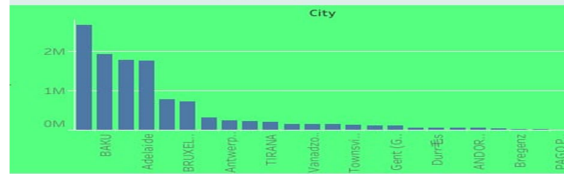
population records by type of countries



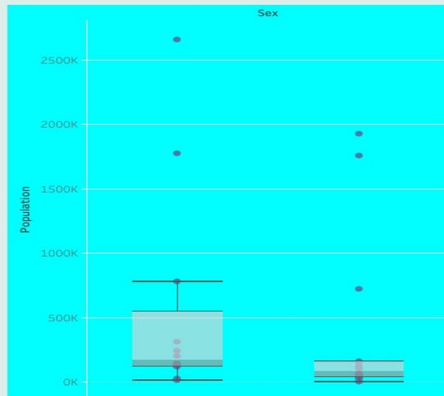
population trends over the years by sex



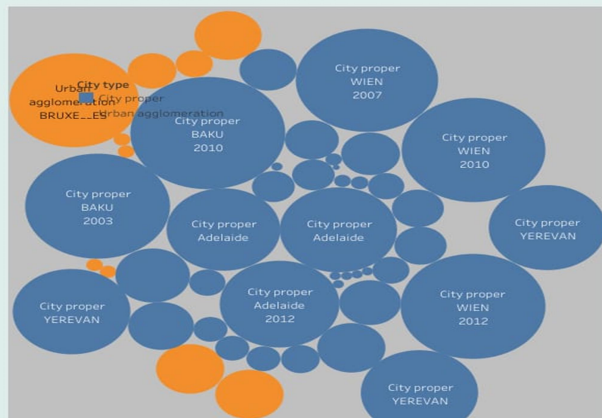
POPULATION BY CITY TYPE



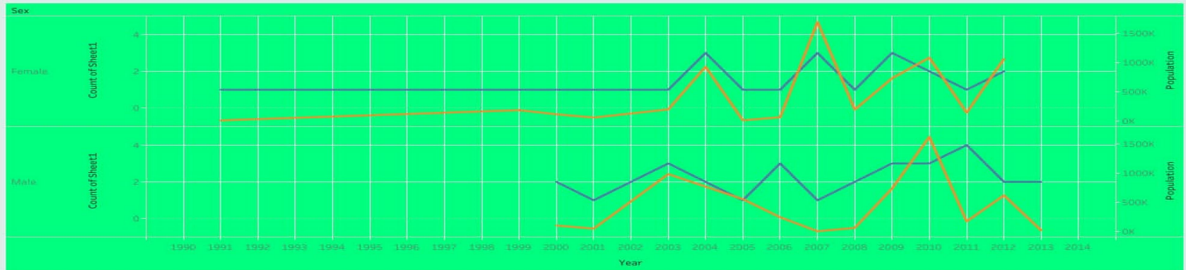
countries with highest average population from 200-2014



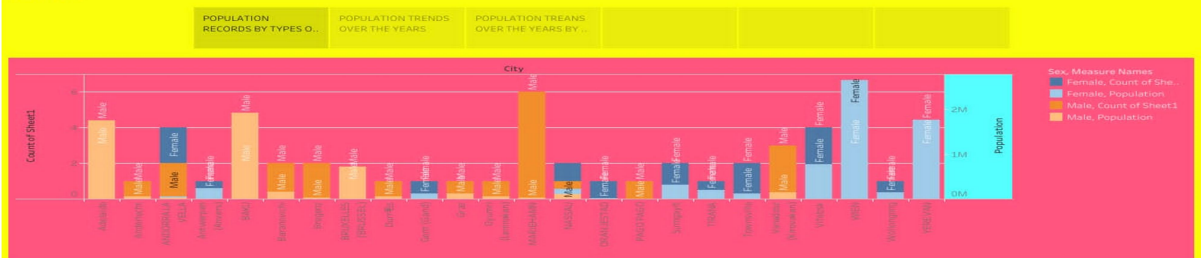
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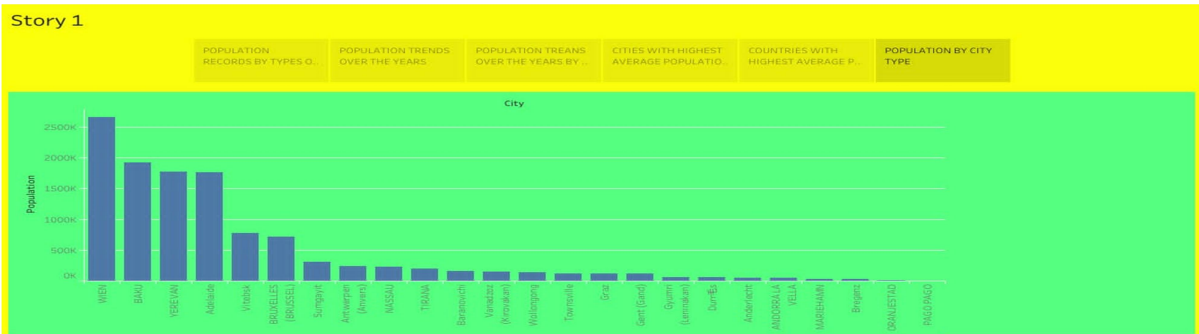
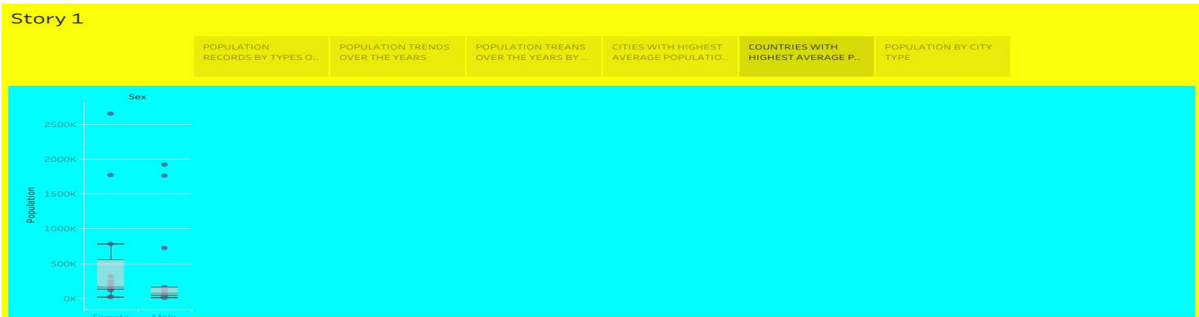
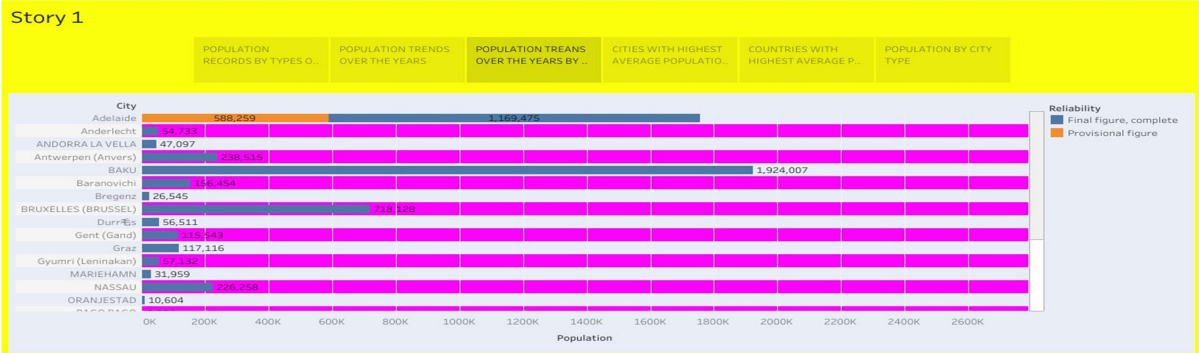
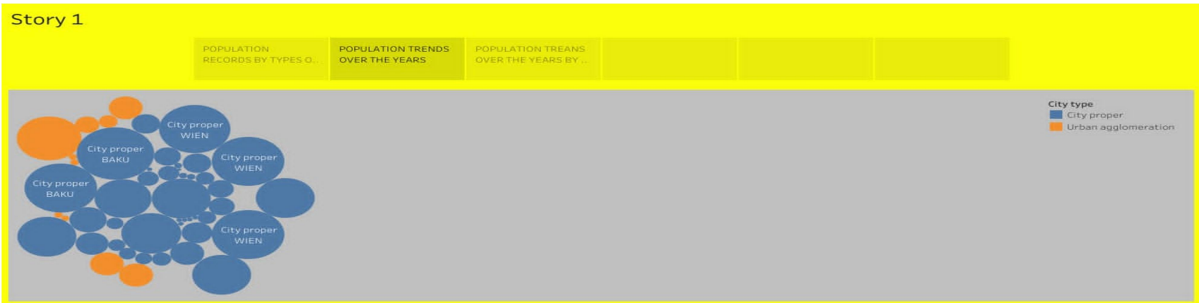


cities with highest average population



Story 1





## ADVANTAGES:

Estimate the basic need for human, such as demand for food, water, power, transportations.

Population growth will lead to economic expansion since more people can produce more goods.

One obvious advantage that a large population might offer is a larger supply of human resources. In locations where unemployment is a serious problem, this will likely not lead to more jobs, but it will boost the number of individuals willing to work for less pay.

The demand for products and services will rise as the population grows, encouraging specialization. This indicates that some people concentrate on creating a single product or service. However, each person's efforts may merge into something amazing depending on their distinct abilities and talents.

Additionally, specialization enables countries to export and participate in globalization. Producers can export commodities to areas afflicted by natural catastrophes or artificial risk instead of only producing locally.

More people means a greater demand for products and services, so more jobs are needed for production. Workers are needed at every level, from the production of basic materials through multiple stages to final distribution during consumption.

More employees are necessary throughout this procedure; thus, they can be needed today even if they weren't previously required for certain talents. Several countries are investing in regulating declining birth rates to address the impending labour deficit.

The government must spend a lot of money on necessities like housing, healthcare, and education. However, a rapidly growing population makes the load heavier.

High population density locations are much more efficient than rural areas and regions with low populations in terms of the per capita carbon footprint. People are more likely to use public transportation and live in easier-to-heat apartment complexes when they reside in densely populated locations.

Studies that examined the benefits of immigration as a crucial source of innovation have demonstrated increased diversity. Adding new cultures to the mix enables people from all backgrounds to approach problems creatively.

The population is declining in many western economies, which has led to a skewing of the population toward the elderly and retired. We are struggling to pay for health care & pensions, which is placing costs on society. Moderate population increase contributes to rebalancing the population by increasing the proportion of young, working adults.

There will be greater demand for some industries in a nation with a higher population. As long as it can produce enough of an item or service to satisfy demand, a company that sells it will experience great success.

If a country can administer its huge population, it can have a significant military advantage compared to smaller ones. The size of the military will increase, as will the number of military supplies if the economy remains stable and the government can successfully handle the nation's expanding population.

Additionally, a population increase may stimulate technological advancement that would enable the production of more sophisticated military products.

The advantages of the population also lie in its ability to promote cultural and racial diversity. According to the latest report by BBC, Italy's population was recorded as 61 million in 2017 and is predicted to halve by the end of this century.

The World Bank stated that 23% of people in Italy were over the age of 65. The Italian government even launched a programme offering €800 to couples per birth to boost population growth. It's a clear indication of how the population can contribute to the development of a nation where most of its people are retired.

Studies have shown increased diversity that looked into the advantages of immigration as a vital source for innovation. New cultures added to the mix allow people from different backgrounds to think outside the box to address challenges.

This means that if the world is open-minded during these times instead of staying stagnant with the status quo, businesses will see a lot more innovation in the future.

## **DISADVANTAGES:**

Demand for resources rises as the population grows. Resources, however, are in infinite quantity; thus, this is an issue because if a large number of people utilize them, they'll run out and become scarce, resulting in poverty.

Natural resources will be depleted more quickly due to increased non-renewable resource usage brought on by an increase in population.

More people means more people to feed, which strains food availability. As a result, food shortages are common in developing countries with quickly growing populations. They cannot feed their expanding population despite their efforts to raise agricultural output.

There are two effects on the growth of the economy from food scarcity. First, a lack of food results in under nutrition, which lowers productivity. It further reduces the workers' capacity to produce. Second, food scarcity requires countries to buy grains, which unnecessarily depletes their foreign exchange reserves.

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More people will produce more air, water, and land pollution. Numerous health problems, including asthma and cancer, are linked to higher pollution levels. The pollutants also harm animals and vegetation.

As there is a growing need for houses and farming due to an increasing population, there will be a greater threat to natural ecosystems. As a result, there will be more pressure to clear forests to make room for agriculture and habitation.

Cities with a high population density frequently have traffic problems. One of the drawbacks of the population is that locations with heavy traffic might be hard to access for emergency vehicles like fire engines and ambulances.

Emergency services are required when there is an accident or another natural disaster. The World Health Organization (WHO) asserts that areas with high population densities may see fewer disease outbreaks and lower infection rates. It is much simpler for germs and viruses to move from person to person when so many people live close to one another.

The Covid-19 pandemic provides a clearer explanation for why cities with large densities of people saw greater incidences of viral infection-related fatalities.

The consequences of climate change will also be seen because of rising greenhouse gas emissions, a major cause of global warming. As the population continues to increase, more damage is being done to our ecosystem.

The ecosystem is under stress due to human consumption and population density, which has reduced biodiversity and increased greenhouse gas emissions from processes like dairy production.

The pressure that a growing population will place on limited water resources contributes to many small and large wars as nations struggle to solve the water crisis.

To boost capital production, developing countries manage the population composition. Due to the high birth rate & short life expectancy, these countries have comparatively high dependency rates. Rapid population growth in emerging countries reduces the quantity of capital

accessible per person, which lowers the workforce's productivity. As a result, their income decreases, and they are less able to save money, negatively affecting capital formation.

A fast-expanding population means that a sizable number of individuals will join the labour force, many of whom may be unable to find employment. The number of job seekers is increasing so quickly in developing countries that it will be difficult to employ everyone despite all attempts to promote planned growth. These countries frequently experience underemployment, unemployment, and covert employment. The rapid increase in the global population makes it practically impossible for economically developing nations to address their unemployment issues.

Most Indians have a poor quality of life due to the country's rapidly expanding population. According to Human Development Report, low quality of life is demonstrated by a lack of knowledge due to illiteracy, a lack of economic security due to the number of people without access to health care and clean water, and a high proportion of children under the age of five who are severely underweight

## **APPLICATIONS:**

1. Estimate the basic need for human, such as demand for food, water, power, transportations.
2. Plan constructions such as housing, highways etc.
3. Estimate the labour forces in various places.
4. Estimate the potential consumptions in various regions.
5. Benefit sociological research, such as providing data about sex ratio or age ratio.
6. Population growth will lead to economic growth with more people able to produce more goods.
7. It will lead to higher tax revenues which can be spent on public goods, such as health care and environmental projects.
8. The global fertility level is expected to decline from 2.5 children per woman in 2019 to 2.2 in 2050, according to the World Populations Prospects study from the UN.
9. Global population growth has positive aspects for the development of society, but it also has negative effects on the planet. In the following lines, we list the most prominent of these:
10. Humans are depleting the planet's natural resources. The World Wide Fund for Nature (WWF) warns: the current overexploitation of natural resources is generating a huge deficit, as 20 % more is consumed each year than can be regenerated and this percentage is growing steadily.
11. Fertility rates.
12. Increase in longevity.
13. International migration.
14. Increase in climate change.
15. Decreased food security.

## **CONCLUSION:**

Development does not just involve the biological and physical aspects of growth, but also the cognitive and social aspects associated with development throughout life. In 2011, the global population reached the 7 billion mark, it stands at almost 7.9 billion in 2021, and it's expected to grow to around 8.5 billion in 2030, 9.7 billion in 2050, and 10.9 billion in 2100.

## **FUTURE SCOPE:**

The Earth's current population is almost 7.6 billion people, and it is expanding. It is expected to surpass 8 billion people by 2025, 9 billion by 2040, and 11 billion by 2100.



The population is quickly increasing, far surpassing our planet's ability to maintain it ,existing habits.