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Population Demographics and Its Impact on the Economic Development of India

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ABSTRACT

This research paper firstly highlights some of the population demographic trends in India. These include overall population growth, fertility rates, life expectancy, population pyramid, urban vs rural population as well as India's wealth pyramid. The next section primarily discusses the impact it has on key economic development indicators. The four discussed in this research are the environment, employment, the unproductive consumers and food security. The paper discusses the influence of such population demographics and the resulting threats and opportunities faced by India. It also highlights some measures the government could take or has taken to alleviate the threat. The research has mainly used secondary data and has used many graphs and economic theories to reach conclusions.

Keywords: Production possibility frontier, productivity, revenue, efficiency, equilibrium

INTRODUCTION

Through the initial stages of human history, the population growth rate was very slow. During the 17th century, the global population was about 1 billion according to the National Geographic. By the end of 2022, the world population will be 8 billion people which is currently estimated by the UN World Population prospects. This steep growth curve in population is fueled by 2 countries - India and China. Numbers from Census organization of India suggest that Indian Population in the 1700s was estimated at 160 million people. Now it's close to 1.3 billion people, that means in the last 3 centuries the population has doubled thrice. Between 1960s and 2020 India's population grew most significantly from 448 million to 1.3 billion people according to data collected by the Government of India. It is also projected by the World Bank that India will soon overtake China to become the most populous country in the world

It can be observed from Figure 1 that the Indian population is showing a steady increase throughout the 1950s and even up to 2050. However, if you look at the population graph, it appears that the gradient is getting shallower. This is because the population growth rate is steadily decreasing.

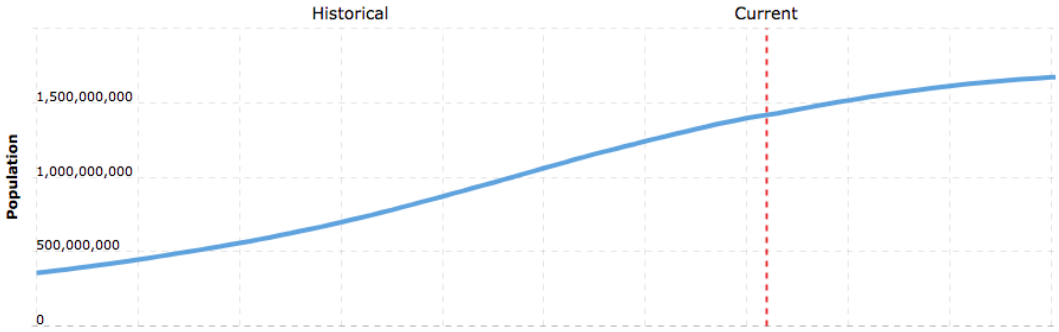

Figure 1: The rate of increase of the Indian Population from 450 million to projections of 1.5 billion. Source:United Nations - World Population Prospects

Figure 2 and 3 show some of India's demographic profile indicators. Over time it can be seen that the country is improving on basic health indicators. These two indicators show a noticeable change in India's age structure. Life

expectancy has seen a dramatic incline averaging around 4.5 years each decade in India (Figure 2). This can be attributed to the government constantly improving accessibility to proper healthcare as a theory presented by the National Library of Medicine. The fertility rate from Figure 3 also shows a steep decline from 5.91 births in 1960 to 2.16 births per woman in India. The annual change in fertility clearly shows us that for most of the time from the 1960s there was a decline until 2013 from -0.6% to almost -3.2%. After this period India saw an almost flat increase in the annual % change according to Figure 3. However, it is still in the negative % change so the fertility rate is still dipping just at a slower rate. It is expected that by 2060 Indian fertility rates annual change will be 0% according to the Economist. However, according to the UN (2019), India is still projected to get to 1.5 billion people by 2030 due to there still being a large number of women in their reproductive age giving birth, thereby fueling population growth, even if the average number of children per woman is reduced.

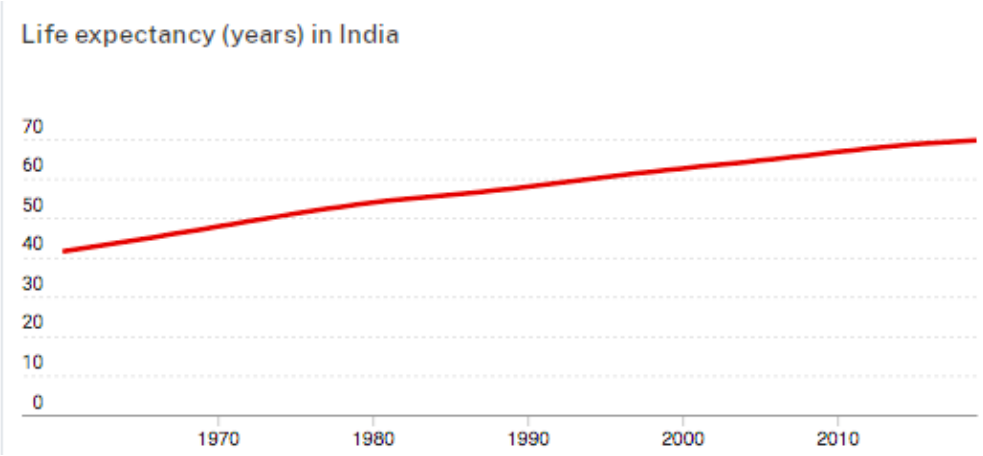

Figure 2, Life expectancy of people in India from 1970 to 2010.
Source: World Bank

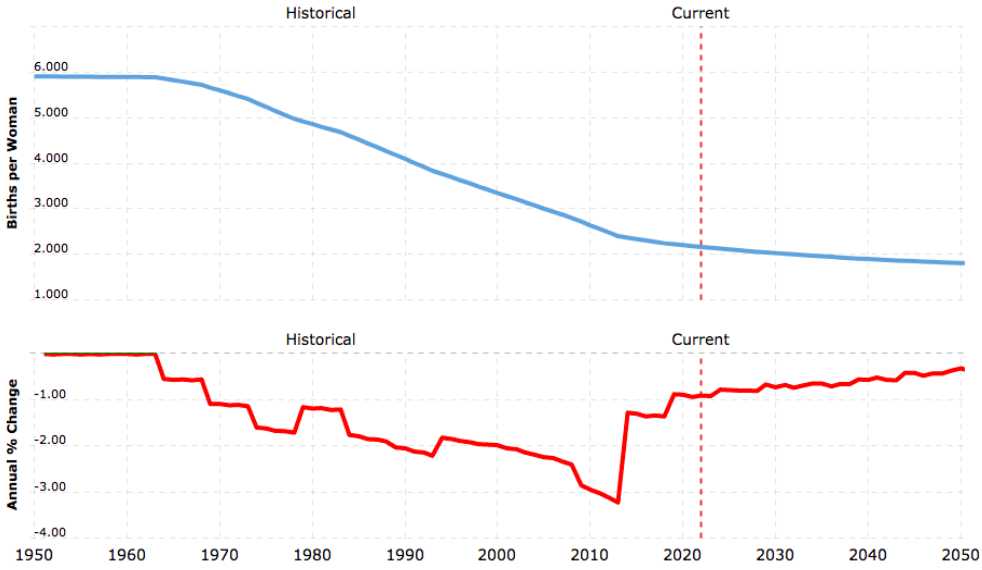

Figure 3, Showing the fertility rates and the rate of change in fertility rates in India since 1950 and projected till 2050.
Source: United Nations- World Population Prospects

Figure 4 shows the population pyramid of India in 2020. The sex ratio in India is 1020 females per 1000 males making it the first time ever for the female population to surpass the male population according to Government of India. Historically, men had a higher ratio according to national data consensus by the Indian government compared to women due to various reasons, including female feticide and female infanticide. Although this practice is illegal, many Indian families have shown to favor boys over girls according to the BBC. However, due to the government playing a huge

role for women's empowerment - such as government sponsored awareness programs - there has been a demographic shift as the number of governments sponsored campaigns increased according to the Ministry of Health and Family welfare of India. This population pyramid also highlights the difference in life expectancy between men and women in India. Through the World Bank data, it can be seen that men have a life expectancy of 69.66 years while women on average have a life expectancy of 72 years. The population pyramid also shows us a lot about the aging of the population. Around the 1960s India's population pyramid had a strong base representing that most of the population was very young. In 1960, World Bank data shows that the median population was only 20 years old. Gradually the base population pyramid shrinks as more individuals move through to the working age. In today's population pyramid most of the population is in the working age (18-60) as can be seen through Figure 4.

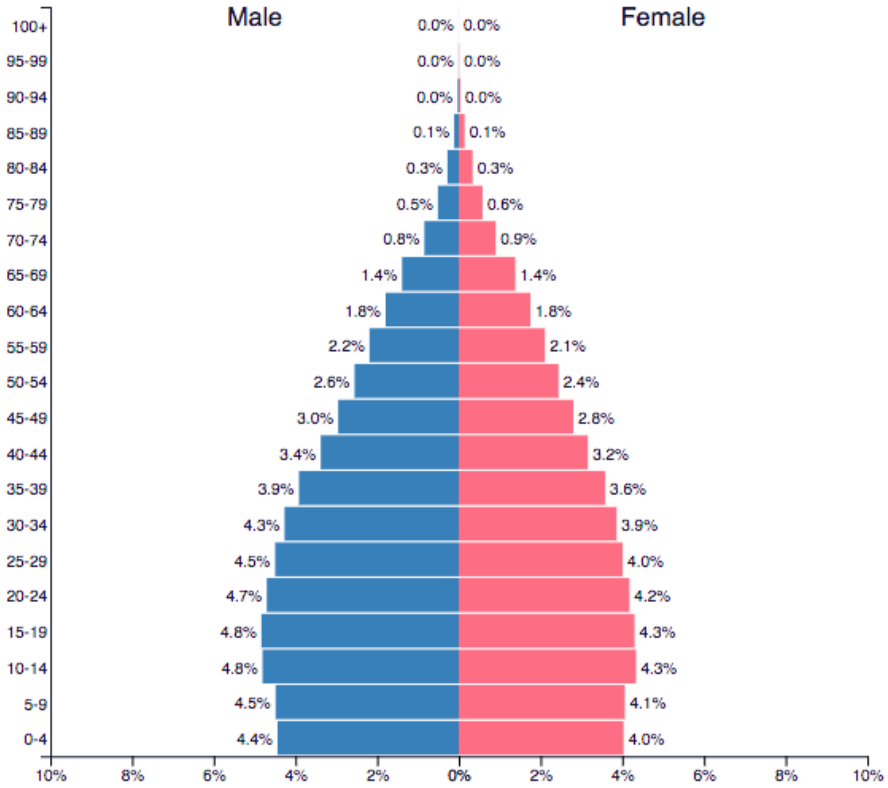

Figure 4, Shows the Population Pyramid of India from age of 0-100 years old during the year of 2021. Source: PopulationPyramid.net

The introduction can be concluded with the thesis statement - the threats and opportunities the Indian demographics present on economic development. The threats which are the negative economic development indicators and opportunities which are the positive economic development indicators are all based on economic theories and data found by the researcher.

MATERIALS AND METHODS

Data collection throughout this research paper has been done through collecting secondary data from various different sources such as previous research papers, government and international organizations websites, newspaper articles, financial reports like the UN, government databases, IMF, World Bank etc. The conclusion will be completely based on data collected.

RESULTS AND DISCUSSIONS

1. Ecology and Environment

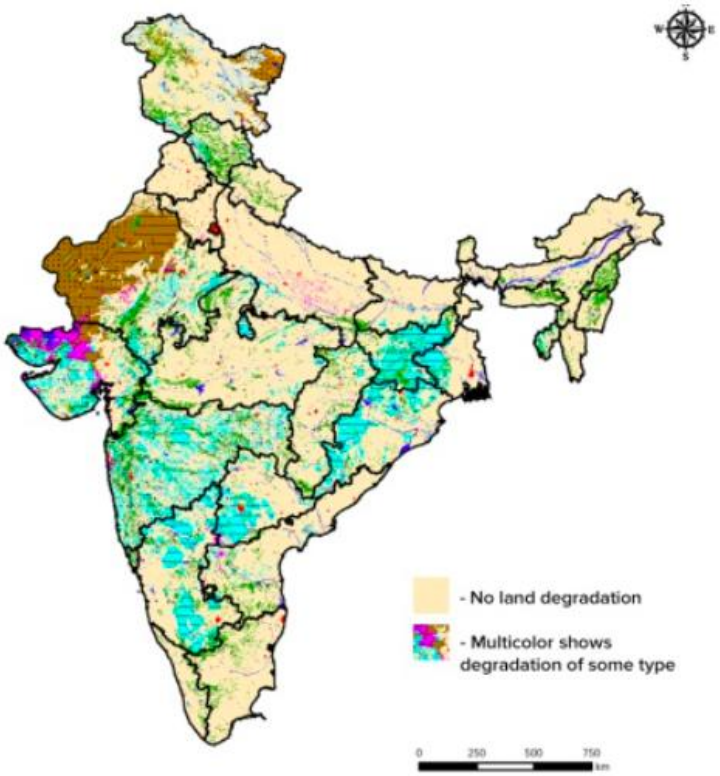

Figure 5: Showcases a map of India representing the parts of India that face land degradation. Source:India Together

The rapid population growth in India has caused rapid degradation of the environment as seen by the data provided by the Ministry of Environment and Forests in India. Population impacts the environment in two primary ways - (i) increase in the use of natural resources, and (ii) the increase in production of wastes, causing loss of biodiversity according to the Journal of Economics and Sustainable Development. Figure 5 shows the Indian land which has undergone some type of degradation. According to the 2018-19 census, 29.7% of the land, which is 97.85 million hectares, has been degraded. According to the United Nations Conference on Environment and Development (UNCED), the primary factor is that of increase in consumption. According to Figure 4, about 49% of the population is part of the working age. Of this working population, about 80% are part of the workforce (currently working or actively searching for a job) according to the 2020 census by the Indian government. Due to the majority of India's population being between 18-50 years (Figure 4), most of the population is likely going to reproduce and have a new generation of children. This causes a rapid population growth and with more people in the country there is higher demand for a good or a service. For example, with the birth of more children now than 50 years ago, there will be a higher demand in the economy for children's clothes, diapers, toys etc. This would mean that more resources would be used in order to produce these goods and supply them. This production process and that of these resources being used degrades the environment. Another example could be that of the increase in fertilizers, pesticides and insecticides used by farmers. In India, according to the 2018 census, 175 kilograms of fertilizer is used per hectare. This is because due to the huge population and the increasing population growth, there is also a huge demand for foods such as vegetables, rice, wheat etc. Thus, the farmers need to use fertilizers, pesticides and insecticides to increase yield. With increase in yield, they can sell more of the crop to this market and earn a higher profit. However, chemical control and chemical fertilizers are mostly non-biodegradable, which again leads to massive degradation of land. This has caused **negative economic development** due to the problems associated with land degradation.

EMPLOYMENT

According to the International Labor Organization (2013), the labor force refers to the total number of people who are currently working in a job (employed) plus the people who are actively seeking a job (unemployed). India currently has the second largest labor force on the planet after China according to the World Bank. There are many population demographics that directly impact the economic development indicator of employment and how it can increase the labor force of the country even further. Fertility rate is one such demographic which directly impacts employment

according to the Indian government. Figure 3 vividly displays this trend. From 1950 to the present day, the fertility rate has halved (Figure 3). This is due to a simple theory that if women have fewer babies, the amount of time they spend looking after the baby in their young years reduces drastically according to New York times. For example, if there was 1 baby then the time the mother needs to invest in looking after the child in the starting years is much lesser than if she had 3 babies. With more time now being available, women can seek employment which they would have had to forgo if they had a child. Now with both the parents in the family having a job, the family income will drastically increase allowing them to spend more on their needs and wants. This will increase their quality of life causing a **positive economic development.** Another particular theory arising from fewer fertility rates is that of the investment in each child. If a family has fewer children, that would mean they could invest more money upon the health and education of each child, raising their productive capacity of the child. It will also make the economy more efficient. The economy is able to produce more goods and services. In economic terms the Production Possibility Frontier (PPF) of a country would expand outwards. A more productive labor force would mean that businesses can produce their goods or services with the same quality at a cheaper rate leading to more profits as presented by Benchmark Cost Solutions. This could translate to more tax revenue that can be collected, which can be used by the government to invest in underprovided goods in the market such as education, healthcare, public parks, housing, fire protection etc. This would improve the quality of life of more people and cause even higher **positive economic development.**

BURDEN ON UNPRODUCTIVE CONSUMERS

An increase in the number of unproductive consumers might also be a problem - mainly the increase in the aging population. In India there are nearly 138 million elderly persons (60+) and it is expected to grow to 176 million people by 2026 according to the World Bank. This is primarily attributed to the increase in life expectancy in India. Figure 2 shows that the life expectancy has been mostly in an upward trajectory. This would mean that more old people are able to live for a longer time. Currently, India is mainly relying on private family networks to aid the elderly with care and financial support as stated in an Indian Government report for the state of elderly care in India. With a growing aging population, India is not expected to be able to withstand an increase in mobile children, widening generation gaps etc. as stated in the Indian government report. The state of elderly care research report by the Indian government claims that India only has 35% of the elderly having health insurance and only about 10% of elderly having a regular adequate post retirement income. Expectedly, the burden on the working population is set to increase. This would likely lead to **negative economic development**.

CONCLUSION

In conclusion, this research essentially highlights some of the theories on why a few populations demographic indicators affect life quality in India. India being a country with a rapidly growing urban as well as total population it really impacts the environment in a severe way. However, a declining fertility rate and an increase in urban population drastically increases employment opportunities. This is good for an average person's quality of life. Life expectancy has shown quite some negative economic indicators for economic development. From the theory and data presented it's clear that there are some threats. However, if policymakers can create working policies to solve some of these threats, it can boost economic development rapidly and alleviate the Human Development Index (HDI) score for India.

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