

A Critical Analysis of Population Growth: Through the Lens of Economic Growth

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Abstract

Various social scientists, philosophers, and economists believe that high population growth is an obstacle to economic growth. Population growth is often viewed negatively in the context of economic growth in developing countries. However, the alarming decline in total fertility rate (TFR) and ageing population in developed countries have changed the perspectives of nations' leaders and economists on the relationship between population growth and economic growth. At present, population growth is essential for developed countries to maintain their existing status. In these countries, many leaders and economists have advocated for increasing population growth to protect their economic security. Based on the data from the World Bank and the Population Reference Bureau, this paper critically analyses population growth through the lens of economic growth. It is found that countries with large populations are experiencing steady economic growth, and developed countries are experiencing concerning economic growth due to a decline in total fertility rates.

Keywords: Total Fertility Rate, Population Growth, Economic Growth and Macroeconomic Issues.

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1. Introduction

The relationship between population and economic growth, as explained by economists, social scientists, and others, has not been concluded in a unanimous answer. Their views on the relationship found dissimilarity in many aspects. Robert Malthus (1798) delineated the relationship between population growth and food supply. He stated that the population grows at an exponential rate and the food supply grows at a linear rate. In the 19th century, the Neo-Malthusians supported his theory. Neo-Malthusians are a group of thinkers and academicians who believe in the Malthusian proposition but disagree with his ideas on controlling measures. Neo-Malthusian warned that the depletion of fertile agricultural land, coal and iron would create a crisis for future generations (Alier & Masjuan, 2004). Jane Goodall, a renowned primatologist, opined that the environmental problem would not be a problem if the present population size were equal to the population size of 500 years ago (Follett, 2020). Malthus' population theory has various practical implications in the world. For instance, China adopted the one-child policy in 1979 to control its population growth, and India adopted the National Population Policy 2000 regarding responsible family planning, improving reproductive and child health care and ensuring access to contraception. Malthusian population theory postulated population growth in a negative sense. David Ricardo (1815) also stated that the marginal productivity of labour decreases with the increase in the number of labourers employed. He applied the law of diminishing returns, particularly to the determination of rent. Today, the world is experiencing different situations as far as the relationship between population and economic growth is concerned. The Demographic Transitions Theory (Thompson, 1929; Notestein, 1945) relates birth rate and death rate with time, and it brings the connection between population growth and developmental stages. The Optimum Population Theory (Cannan, 1924) polished Malthusian Population Theory and was later popularised by Robbins, Carr-Saunders and Dalton. According to Dalton, "the population with the highest per head income is the optimum population". The theory elucidates the overpopulation, which reduces income per head in society. Both Malthus and Ricardo have pessimistic views on the growing population. The Optimum Population Theory advances an optimistic view up to a certain level of population. Still, after the optimum population, it turns towards a pessimistic view on the growth of the population. The Demographic Transitions Theory clearly states that the developed stage of economies

always has low population growth. However, it doesn't argue for the requirements of population growth after reaching the developed stage.

Economic growth needs a sizeable population to raise aggregate demand. A higher population with high per capita income can drive the growth wheel by boosting aggregate demand. Economic growth requires a workforce that can work with capital. Joseph Schumpeter (1911) advocated for innovation to boost economic growth. Innovation originates from a skilled workforce or human capital. Sufficient human capital leads to innovation, and this innovation drives economic growth. Countries with larger working-age populations have greater potential for economic growth. The Mercantilists (16th to 18th century in Europe) were in favour of population growth for the development of trade. The Physiocrats, 18th-century French Enlightenment thinkers, also believed that the population was a source of strength (Lokanathan, 2009). However, they also relate the growth of the population to the growth of misery. Greek Philosophers, Plato and Aristotle (Lianos, 2022), believed that there is a direct relationship between population and poverty. Both of them agree that a limited population is essential for a happy life in society. The researchers have interpreted the relationship between population growth and economic growth in different ways. But the existing literature has not discussed on the concerning decline in total fertility rate of developed countries; therefore, this study delves into the relationship between population and economic growth through a critical lens.

Given this background, the objective of this paper is to analyse population growth alongside economic growth and to examine the population scenario in developed countries. It is descriptive and explores the past evidence through the literature in connection with population growth and economic progress, by highlighting different population theories. The paper's arguments are supported by statistical tools, such as line graphs and bar diagrams, with data taken from secondary sources, such as the World Bank and the Population Reference Bureau.

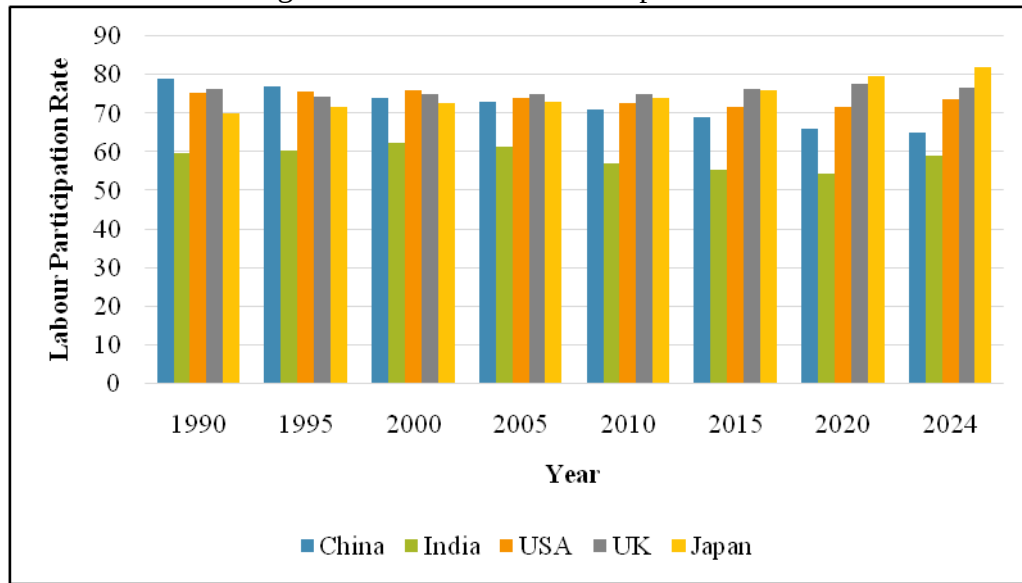
2. Population in the Journey of Economic Growth

A sizable population is crucial for economic growth. To some extent, the large size of the population can be considered as strength for economic growth. The large size of the population supplies cheap labourers to firms on the one hand, and they boost aggregate demand on the other hand. A larger population leads to economies of scale, specialisation and a younger demographic structure (Atanda et al. 2012). China, the most populous country in the world before 2023, has experienced a large population size in its development journey. Likewise, India, the most populous country in the world, 145.09 crore as per the World Bank data (2024), has witnessed its large population size on its development trajectory. The large size of the labour force contributes to the growth of GDP, which has been witnessed in many countries, including China and India. Even in the United States of America, the economic strength depends on the skilled labour force migrated from other developing countries through the H-1B visa. Immigration through the H-1B visa has lowered prices, increased the IT output and substantially increased the profits of firms (Bound et al., 2017).

Labour force participation is crucial for economic growth. The developed countries have a high labour participation rate, which indicates the necessity of the population in the economic growth journey. Figure 1 shows the labour force participation rate of India, China, Japan, the UK and the USA. The labour force participation rates of China, the USA, the UK and Japan are high, and it clearly indicates how developed countries are using their population in productive activities for economic growth. More labour force participation means more economic contribution to the nation.

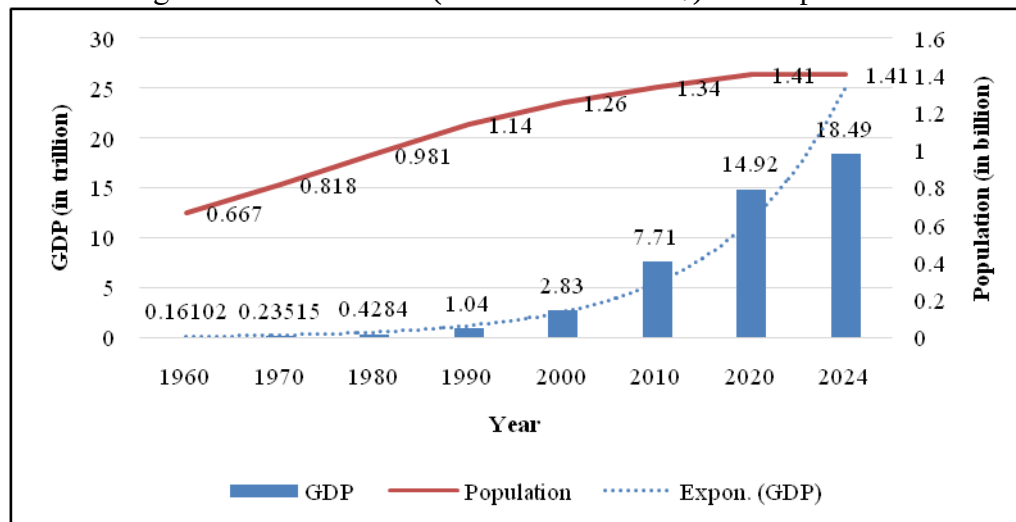
The world's two most populous countries, China and India, are the second and the fifth largest economies in the world in 2025. Both countries have great potential to surpass other developed countries in the coming year. Figure 2 shows China's GDP and the size of its population since 1960. The left vertical axis measures its GDP, and the right vertical axis measures population size. It is shown that China's GDP was 18.49 trillion dollars in 2024. China could use its human resources along with technological advancement. Its growth rate has changed drastically since the 1990s. During the period 1978-2008, its human capital stock increased by 7.6% annually and it contributed 33.2% to its economic growth (Whalley & Zhao, 2010).

Figure 1: Labour Force Participation Rate



Sources: World Bank (n.d.), World Bank Open Data, 2025

Figure 2: China's GDP (Constant 2015 US\$) and Population

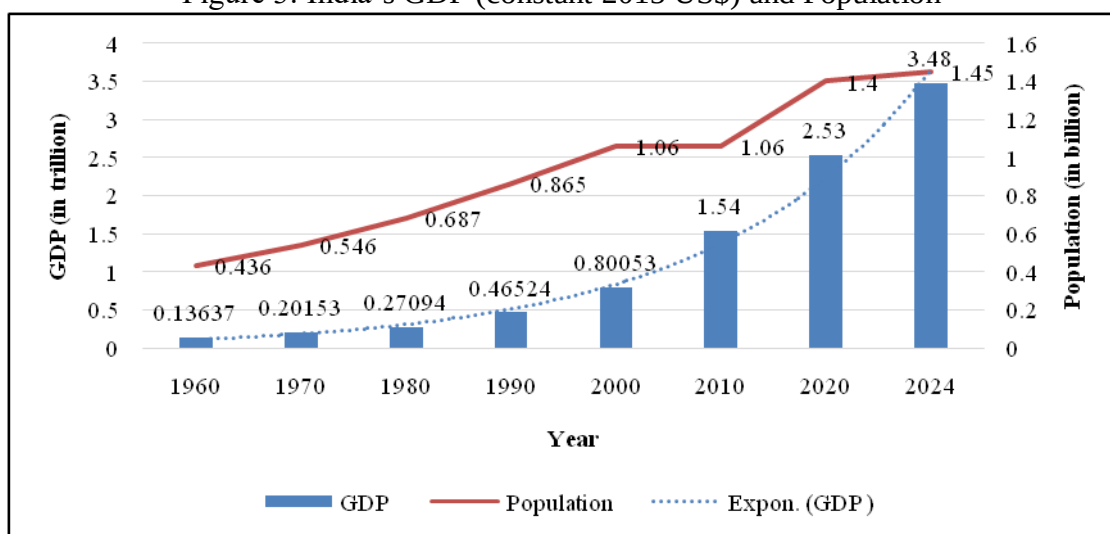


Source: World Bank (n.d.), World Bank Open Data, 2025

China's GDP has increased exponentially since its economic reforms, and its large population has witnessed this growth journey. In China, the population size was seen increasing until 2020, even though it has not moved in parallel with GDP growth. Figure 3 shows India's GDP and population since 1960. India's GDP is 3.48 trillion dollars in 2024, and it is one of the fastest-growing economies in recent times. Its GDP growth rate has increased speedily since the implementation of its economic reforms in 1991. The policies of Liberalisation, Privatisation and Globalisation (LPG) adopted in 1991 have had a good impact on its economic health (Uppal, 1993; Aiyar, 2016; Monga & Batra,

2019). According to World Bank data, India is the most populous country in the world, and like China, its population has witnessed steady GDP growth. Hence, even though much of the existing literature viewed the population as an obstacle to economic growth, its undeniable positive role cannot be ignored. It might be true that high population growth can be an obstacle to economic growth, but it is also true that a sizable population is needed for a country to maintain growth and national security.

Figure 3: India's GDP (constant 2015 US\$) and Population



Source: World Bank (n.d.), World Bank Open Data, 2025

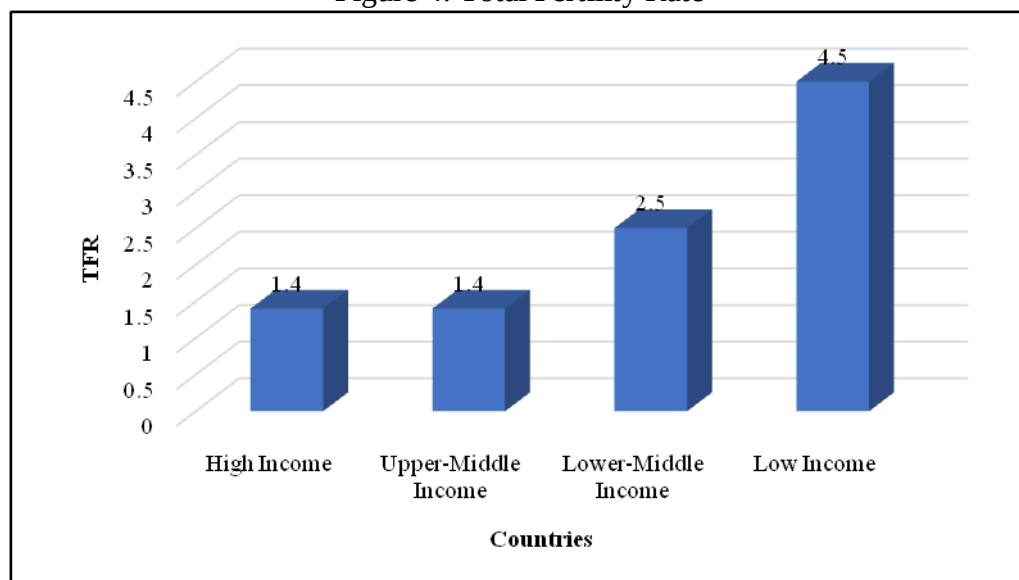
3. Scenario of Population in Developed Countries

The population fertility rate indicates the population growth scenario of a country. A high total fertility rate indicates a high population growth rate, while a low fertility rate indicates an ageing population, which reduces the labour force for productive activities. As per the Population Reference Bureau, 2024 data, the total fertility rate (TFR) of high-income (developed) and upper-middle-income countries is 1.4 per woman, which is much lower than the replacement level fertility rate of 2.1 per woman. The fertility rate of high-income or developed and upper-middle-income countries has become a concern. Because of an ageing population, these countries are obliged to depend on migrant labour forces for expanding and maintaining their economic activities. The total fertility rate of low-income countries is high, that is, 4.5 per woman (World Reference Bureau, 2024). Figure

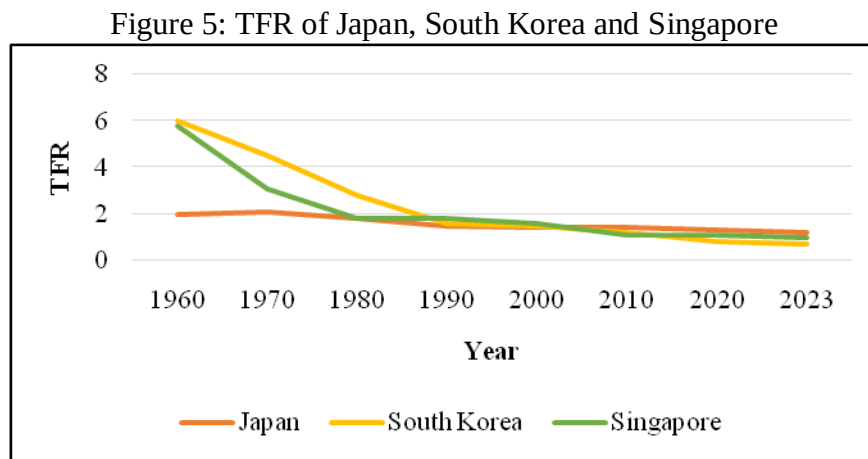
4 shows the Total Fertility Rate of High Income, Upper-Middle Income, Lower-Middle Income and Low-Income countries.

The TFR of some of the developed countries is much lower than the average TFR of developed countries. For instance, Japan's TFR was 1.15 per woman in 2024, and its decreasing fertility rate seems a worry for the nation. Japan's population is the world's oldest, with its median age 48.4 years (IMF, 2020). Japan's Ex-Prime Minister, Shigeru Ishiba, described Japan's ageing population as a "quiet emergency" (BBC News, 2025). The TFR of Singapore was 5.8 per woman in 1960, and it decreased sharply till 1980. According to the Dept of Statistics, Singapore, its TFR is 0.97 live births per woman in 2024, which is lower than Japan's TFR. One of the advanced or developed countries, South Korea, is also facing a demographic crisis, with a TFR of 0.65 live births per woman in 2023, and it is the lowest globally (Kin, J. K., 2025). Its TFR was 6 per woman in 1960, and since then it has been fallen gradually. Figure 5 shows the TFR of three developed countries of Asia. All these three developed countries have been experiencing depopulation.

Figure 4: Total Fertility Rate



Source: Population Reference Bureau, 2024



Source: World Bank (n.d.), World Bank Open Data, 2025

Depopulation in advanced countries is now a major challenge to the economic and social health of nations. “Fewer births and smaller populations naturally mean fewer workers, fewer savers and spenders, potentially sending an economy into contraction” (Bloom, Kuhn & Prettnner, 2025). Myrdal & Myrdal (1934) argued that “Sweden is faced with a population crisis due to declining birth rates”. The declining fertility rate in high-income and upper-middle-income countries is a big macroeconomic concern. Bloom et al. (2023) stated that the fertility decline has both demand and supply effects at the macroeconomic level. The shortage of labour supply on the supply side and the reduction of consumption expenditure on the demand side will have repercussions on investment expenditure. China, which has experienced rapid population growth during its economic growth, is also facing challenges in recent years. Its TFR is only 1.0 per woman. Muir et al. (2024) stated that a declining workforce is projected to lower potential growth sustainability in the long run.

4. Conclusion

In the growing stage of nations, many social scientists, philosophers and economists argued for the control of population growth. Population growth is viewed in a negative sense as far as economic growth is concerned. Many countries have adopted population control measures to stabilise economic growth. Population growth is considered a major macroeconomic problem in the developing stages of nations. However, recently, the

shrinking population in developed countries has been seen as a threat to the nations. The threat is perceived in social, economic and defence security. Many nations' leaders, economists and social scientists have advocated for increasing family members. Some developed countries have already taken some initiatives to have more children. For instance, Finland, Greece, Hungary, South Korea, Japan, etc. have taken pro-natalist policies to have more children (Fleming, 2020; Choo & Jales, 2021; King, 2026). The decreasing fertility rate and ageing population have created concerns in many developed countries like shortage of labour supply, dependence on migrant labourers, security of the aged population, etc.

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