

# KAS Young Voices: Fresh Insights from Asia



December 2023

## Fertility Decline and Socioeconomic Transformations

---

Exploring China, India, and Indonesia

*Nazia*

This research paper aims to study the impact of fertility rates on various socio-economic indicators including poverty level, labor force composition, education level and spending, and innovation in China, India, and Indonesia. The fertility rate, the average number of children a woman has during her reproductive years, is an important demographic factor that can significantly influence a nation's development trajectory. This study seeks to highlight the relationship between fertility rates and key socio-economic indicators by analyzing data from these three large and diverse countries, China, India, and Indonesia. Additionally, this paper will look at how societies can maintain their fertility rate to a sustainable level.

## Introduction

In the populous nations of China, India, and Indonesia, a subtle transformation shift is taking place. The declining number of children per family is reshaping society and the economy in profound ways. This paper explores how having fewer children is connected to socioeconomic factors, for example, it can mean fewer people live in poverty, the kinds of jobs people do can change, families might spend more on education as they will have only 1 or 2 children, and countries may come up with more inventions and ideas. While China has witnessed a steep decline in the fertility rate following its “One-Child” policy, it contributed to economic growth and a drastic dip in poverty. However, China now faces an aging population which poses different challenges. Meanwhile, India and Indonesia, though they have approached the situation differently, are also seeing their fertility rates fall. This is bringing new opportunities as well as challenges. Opportunities include better chances for children to go to school and a larger working-age population, which helps the economy to grow. However, persistent falls in the fertility rate pose challenges for future demographic dilemmas. A case in point is the current decline that is happening in Japan’s society. In order to avoid repeating the same mistake there is a need to maintain the fertility rate at a sustainable level and need to implement an appropriate set of policies for a sustainable society.

## Declining Fertility Rates in China, India, and Indonesia

The relation between fertility rate and socio-economic factors has been a focal point of contemporary scholarly discourse, particularly within the context of our swiftly evolving global society. The World Health Organization defines the fertility rate as “the average number of children a hypothetical cohort of women would have at the end of their reproductive period if they were subject during their whole lives to the fertility rates of a given period and if they were not subject to mortality”. It is expressed as “children per woman”. A total fertility of 2.1 is considered as the replacement rate at which the population will remain sustained (United Nations, 2007). Some countries want a low fertility rate to have a stable economy with low poverty. One such country is China, which has been facing a drastic decline in its fertility rate since the 1970s. It worsened after the Chinese government implemented the “One Child” policy from 1980 to 2016. According to the data published by Statista, China’s fertility rate was already around 4 when the “One-Child” policy was implemented. It reached a below-replacement rate in the 1990s (O’Neill, 2022). In another data published by Statista, China’s fertility rate as of 2021 is 1.16, which is much below the replacement rate (Textor, 2023).

Although China has been facing this issue for decades, countries such as India and Indonesia just recently experienced fertility rates below replacement. India is now the most populous country in the world with a rapidly growing economy. Like China, India also started facing a declining fertility rate in the 1970s. Its fertility rate reached below the replacement rate recently in 2020. As of 2021, India’s fertility rate is 2.03 (O’Neill, 2023). One of the key reasons behind India’s declining fertility rate in the 1970s was the introduction of a family planning program by the Indian government in 1970 to control the birth rate. Since the government policies were not as strictly implemented as China’s “One-Child” policy, India was slower to reach a replacement rate.

Indonesia is also facing similar trends to India. Indonesia has the fourth largest population in the world but its fertility rate is also declining. Indonesia’s population also started declining in the 1970s with the introduction of government policies for population control (FCBI, 2013). According to Statista’s

publication for Indonesia's fertility rate, its fertility rate in the 1960s was above 5, pretty close to India, however, it dropped to 2.2 in 2022 (O'Neill, 2022).

The following section will unpack the impact of declining fertility rates on key economic indicators in China, India, and Indonesia. The concluding section analyzes the importance of sustainable fertility levels to sustain economic growth.

## Fertility Rates and their Impact on Important Socio-economic Indicators

### Poverty Level

Governments implement birth control policies to have a stable economy with a low level of poverty. The World Bank (2022), considers people to be in extreme poverty when they have less than \$2.15 per day. About 80% of China's population was in extreme poverty in 1980 but in 2019, this was reduced to less than 1% (Lugo et al., 2021). According to the World Bank report of 2022, China was successful in "lifting 800 million people out of poverty".

One of the factors behind China's success in poverty reduction is the implementation of the One-Child policy (World Bank, 2022). The falling fertility rate led to a demographic dividend and also reduced the dependency ratio in China (World Bank, 2022). This means that there were more people in the labor force compared to the dependent population, which is composed of children and the elderly. China reduced its dependency ratio from about 70% in 1980 to about 37% in 2010 (Textor, 2023). However, China is expected to have a high dependency ratio in the future due to a continuous low fertility rate which leads to more elderly population and less young population.

On the other hand, India's poverty level reduced from 63.11% in 1977 to 11.90% in 2021 (World Bank, Poverty, and Inequality Platform). Because India reached a replacement rate recently in 2021, its poverty level is still high compared to China. India's dependency ratio in 2020 was 48.66, reduced from 53.35% in 2015 (Rathore, 2023). India's poverty level as well as its dependency ratio has been reducing gradually.

Although Indonesia's dependency ratio is at 37% as of 2021, Indonesia with similar trends in fertility rate has made impressive progress in reducing its poverty level. Indonesia reduced its poverty level from 74% in 1984 to 2.15% in 2021 (World Bank, Poverty and Inequality Platform). One of the reasons that makes Indonesia different from India is that Indonesia has a high labor force population of about 69.3% as of February 2023 (*Indonesia Labour Force Participation Rate, 2005 – 2023*). India's working population is only 41.3% as of 2022 (*India Labour Force Participation Rate, 1990 – 2023*).

The data highlight a direct relationship between the fertility rate and the poverty level of a nation; the poverty level declines as the fertility level is reduced. China's implementation of the One-Child policy in the 1970s led to a significant reduction in the fertility rate and contributed to a demographic dividend and a drastic decrease in poverty. This policy resulted in a low dependency ratio and a large proportion of the population in the labor force which helped boost the economy and therefore reduced poverty. In contrast, India and Indonesia, without any strict one-child policy experience a gradual decline in fertility rate as well as poverty level. This highlights that the faster the fertility rate declines the lower the poverty level, keeping in mind the importance of dependency ratio and workforce in the economy.

## Labor Force Composition

China's workforce in the 1970s was below 60% and it peaked at around 80% in 1990 (*China Labour Force Participation Rate, 1990 – 2023*). This increase in the workforce was a result of a slowing population growth. China's working-age population increased and the dependency ratio was reduced (Rush, 2011). However, due to the persistent low fertility rate China's population is getting old and its workforce was reduced to around 60% in 2022 (*China Labour Force Participation Rate, 1990 – 2023*).

In contrast, India has a workforce of only 41.3% as of 2022, due to its high dependency ratio (*India Labour Force Participation Rate, 1990 – 2023*). However, it has experienced a rise in workforce from about 200 million in 1970 to 470 million in 2021 (CEIC, 2021). Since the fertility rate of India reached its replacement rate around 2020, its dependency ratio has also reduced by at least 5% (Rathore, 2023). On the other hand, Indonesia has a higher labor force than both China and India. Indonesia's workforce reached about 69.3% of the total population in 2023 (*Indonesia Labour Force Participation Rate, 2005 – 2023*). This is an increase from approximately 77 million people in the workforce in 1990 to more than 137 million in 2022 (World Bank, 2022).

This trend shows that a low fertility rate has a positive impact on a country's labor force at the beginning, however, if fertility continues to fall it will result in labor shortage and a low workforce in the long run, such as in China. China experienced a notable surge in its workforce from the 1970s to the 1990s, driven by a decline in population growth rates. However, the persistent low fertility rate in recent years has led to an aging population and a decrease in the workforce percentage. In contrast, India's workforce has been constrained by a high dependency ratio, however, recent improvements in fertility rates may lead to future growth in the workforce. Meanwhile, Indonesia stands out with a substantial workforce. These demographic trends emphasize the importance of population policies in influencing a country's labor force dynamics and underscore the need for strategic planning to address future workforce challenges.

## Education Levels and Spending

The relationship between fertility rate and education has been an inverse relationship. A low fertility rate indicates that people with higher education will increase. If families have one or two children, financial pressure on them is low and they can spend more on their child's education.

China's literacy rate in 1982 was about 66% and has reached 97.2% in 2020 (World Bank, 2020). In addition to other economic and political policies, the low fertility rate or impact of the "One-Child" policy played a significant role in increased education levels. Household spending on child education increased from 2% in 1990 to 13% in 2001 (Zhang et al., December, 12).

On the other hand, India reached a literacy rate of 74% in 2018 which is about a 40% increase from 1971 when the literacy rate was only 34.45% (Ministry of Human Resource Development, 2003). Average household expenditure on a child's education has also been increasing since the independence of India in 1947. It has increased from only 0.6% in 1950-51 to 2.6% in the year 2007-08 (Singh & Ram, 2020). This in 2017-18 further increased to 15% in urban and 18% in rural areas of India (Choudury & Kumar, 80). India's household spending has been increasing not only in urban but also in rural areas which indicates that households have started seeing investing in a child's education as a significant expenditure and also having fewer children means you can spend more on them.

In contrast, Indonesia's literacy rate was 67% in 1980 and reached 96% in 2020 (World Bank, 2023). One of the factors behind this high literacy rate is the introduction of six-year compulsory education that was implemented by the government in 1984. In the 1970s, students in grades 3, 4, and 5 were forced to drop out and start working to support their families due to the high level of poverty (Heneveld, 1979, 145). However, in 2020 the enrollment at high school was 84.23%, which is a huge improvement (Statista, 2023). Additionally, in the year 2020, the average household expenditure on a child's education was 6% of their annual income (Nurhayati-Wolff, 2023). This is relatively low compared to China and India because in Indonesia the government provides funds for children's education from the age of 7 years to 15 years which results in overall less household spending on education (Wicaksono, 2022, 7).

In conclusion, the inverse relationship between fertility rate and education is evident, as lower fertility rates tend to coincide with higher education attainment. It can be particularly seen in China's case, where implementing the "One-Child" policy significantly contributed to a remarkable surge in literacy rates over the years. Additionally, India has experienced substantial progress in education with a notable increase in literacy rate. This is happening not only in cities but in the countryside too. Conversely, in Indonesia, the government's introduction of compulsory education and education funding played a pivotal role in achieving high literacy rates, which reduced the burden of education expenses on households. These divergent results indicate a complex relationship between fertility rate and education, influenced by factors such as, economic, political, and cultural.

### **Innovation Level and Productivity**

The impact of fertility rates on a nation's productivity can be partially observed through the lens of Total Factor Productivity (TFP), which measures how efficiently and innovatively an economy uses its inputs to produce output (Saliola & Seker, 2011). TFP encompasses various elements including technological advancements, skills of the workforce, and organizational efficiencies. A country's TFP is often seen as a direct reflection of its innovative capabilities and productivity growth.

China has witnessed a notable increase in TFP, particularly since the 1990s. Its TFP in 1970 was 0.85, however, it experienced a decline and re-gained its increasing trend in the 1990s (Our World in Data, 2019). This rise is attributed to the country's economic reforms and investment in technology and education, aligning with its period of reduced fertility rates. By 2014, China's TFP had climbed to 1.02, indicating a more efficient use of labor and capital than in previous decades (Our World in Data, 2019). This suggests that the low fertility rate let China invest in education and technology more, contributing to its status as an economic superpower.

India's TFP also shows a positive trend, especially post-1990. Initially, India's TFP had dipped slightly; however, it began to recover, reaching 1.02 in 2019 (Our World in Data, 2019). The upward movement of India's TFP can be linked to its liberalization policies, increased investment in technology sectors, and improvements in educational standards, which coincided with a falling fertility rate.

As for Indonesia, the TFP in 1970 was 0.89 and it has seen a gradual increase since the 2000s, reaching 1.01 by 2019 (Our World in Data, 2019). Despite the slower economic growth in comparison to China and India, Indonesia's consistent investment in human capital and infrastructure has begun to reflect in its productivity levels.

In summary, TFP serves as a key indicator of how a country's economic inputs are transformed into outputs, and the data from China, India, and Indonesia suggest that lower fertility rates may correlate with increased investments in technology and education, ultimately leading to greater efficiency and productivity within their economies. However, this may not be a direct correlation and the relationship between fertility rates and TFP is complex.

The analysis underscores the significant impact of low fertility rates and changing demographic trends on poverty, labor force, education, and innovation in China, India, and Indonesia. China's "One-Child" policy led to a significant poverty reduction and improved education, however, China now faces challenges from an aging population. India shows steady progress, particularly in education, with a recent reduction in fertility rates. Indonesia, although has similar trends to India in its fertility rate, stands out for rapid poverty reduction and high labor force participation. However, it is crucial to recognize that persistent low fertility rates pose risks, emphasizing the need for sustainable fertility policies for long-term societal well-being.

## A Sustainable Fertility Rate

A sustainable fertility level is a crucial aspect of a nation's demography and economy. It is significant because it allows a population to replace itself from one generation to the next. A declining fertility rate when it reaches below the replacement rate can pose significant shortcomings and challenges to a country's social and economic factors. In the long run, it can lead to demographic imbalance, labor shortages, and increased pressure on the social welfare system. One of the key differences to notice here is, that in the past rich and developed countries were experiencing low fertility rates such as Japan and some European countries. However, in the present, countries like India and Indonesia have also started experiencing the issue even before they can develop, these countries are getting old before they can get rich (The Economist, 2023). It has been highly difficult for countries to maintain their fertility rate at the replacement level to stop it from reaching below the replacement rate.

One of the primary concerns associated with the declining fertility rate is the aging population. When birth decreases, the number of elderly population rises and this leads to a high dependency ratio, where a small working-age population will have to support a larger elderly population, through social welfare systems and pension programs. Japan is an example through which every country should learn a lesson. It is the third-largest economy and is one of the most highly developed countries. Japan's fertility rate declined to 1.3 in 2021 (World Bank, 2021). Japan's baby-boom generation is now above 70 years old which is leading to issues like an aging population, labor shortage, and high expenditure on healthcare (Schneider, 2020). Although the Japanese government has been introducing policies to increase birth rates, policies remain ineffective.

The aging population is now also a problem in developing countries like China, India, and Indonesia, mainly due to persistent declining fertility rates. Although China was able to achieve a replacement rate and develop its country, China, just like Japan, is not able to maintain its fertility rate at the replacement level. China's fertility rate declined to 1.2 in 2021 which is below the replacement rate and very near to Japan's rate of 1.3 in the same year (World Bank, 2022). With the shrinking young population and expanding elderly population China is estimated to have about 30% of its population above 60 years by 2050 (Banister et al., 2010). On the other hand, India and Indonesia are still behind China in terms of economy but are expected to have an aging population before they can reach high economic

development (The Economist, 2023). For developing countries, prioritizing the implementation of policies to prevent similar challenges of the aging population faced by developed nations should be of utmost importance.

## Policy Implications

Government policies play a huge role in society as we have seen in the previous section of this paper. Governments were successfully able to decrease their high fertility rate although, increasing the fertility rate at a sustainable replacement level remains to be a complex policy task. Factors like parental leave, flexible working hours, and financial support are very important in order to increase birth rates (United Nations, 2017). These policies were successfully implemented in German society by the government, and Germany has successfully defeated the falling fertility rate and has been experiencing an increase every year in its birth rates. In 2000, Germany's fertility rate was at 1.38 which increased to 1.58 in 2021 (Statista, 2023). Although it is a small increase this is still a huge one since increasing the fertility rate even slightly is considered to be very difficult. Germany's rise in birth rates is due to the implementation of family-friendly policies as well as migration (Thomasson, 2021). In Germany, parents receive 250 Euro per month per child as a "Child Benefit" from the government up to the age of 18 years old (Federal Ministry of Education and Research). The child benefit will not be used in a child's education because most of the schools are run by the state and are free of tuition (European Commission, 2023). Additionally, the German government provides parental allowance and parental leave (Federal Ministry of Education and Research). These factors significantly aid parents and have played an essential role in encouraging childbirth and increasing the fertility rate in Germany. China, India, and Indonesia could benefit from adopting Germany's strategy to manage fertility rates. However, to implement these policies a country's economic condition needs to be strong, and a large amount of the government's budget needs to be spent on education and welfare sectors.

China, after reversing its one-child policy in 2015 has taken measures to increase birth, such as tax deductions, extended maternity leave, and housing subsidies (Master & Gibbs, 2023). These policies were implemented in 2021, and according to the UN report published in 2015, China is already slow and late to react to the declining fertility rate (United Nations, 2015).

For India, the maternity leave was increased to 26 weeks in 2017, which was initially only 12 weeks, and 15 days of paternity leave is also given, however, these policies do not bind private sectors towards maternity leave (The Economic Times, 2023). In the education sector of India, there are public schools, however, parents prefer private schools even though they are expensive, due to the quality of education. Therefore, the Indian government should encourage the private sector to provide an efficient amount of maternity leave in addition to that, India's government should take measures to improve the quality of education at public schools to lighten the burden of tuition on parents.

Indonesia's law as of 2022 provides 13 weeks of total maternity leave, 1.5 months before delivery, and 1.5 months after the delivery (Clarisa, 2023). However, as for paternity leave, only 2 two days of paid paternity leave is allowed (Clarisa, 2023). In order to encourage people to have children, the government should support parents by increasing maternity leave as well as paternity leave.

China has taken measures towards increasing the fertility rate in 2021, to which we will only be able to see the results after some time. However, for India and Indonesia, governments need to prioritize policies such as parental allowance, child support, education, and maternity leave. By offering direct financial

support, ensuring job security during parental leave, and promoting good quality affordable education, these countries could foster conditions that encourage childbirth without imposing undue stress on parents.

## Conclusion

In conclusion, in the comparative study on the impact of fertility rates on socioeconomic indicators across China, India, and Indonesia, it is evident that fertility dynamics have an implicit impact on poverty levels, workforce composition, education expenditure, and innovation capacities. The study outlines China's success in lowering poverty through stringent population control, albeit now contending with an aging demographic. India's gradual fertility decline correlates with its steady educational progress and poverty reduction. Indonesia, mirroring India's trends, showcases significant poverty alleviation and a robust labor force. However, sustainable fertility rates emerge as pivotal for long-term economic vitality, highlighting the need for policy frameworks that balance demographic growth with socio-economic aspirations, through supportive measures like parental allowances, child benefits, and maternity and paternity leave. As each country navigates its unique demographic challenges, the adaptation of family-friendly policies, in conjunction with a deep understanding of local contexts, could steer them towards a harmonious socio-economic future. This research underscores the complexity of demographic transitions and their far-reaching impacts, advocating for strategic policy interventions to ensure sustainable development and societal well-being.

## About the Author

**Nazia** is a third-year International Affairs student at Temple University's Japan Campus. She comes from a multicultural background; she was born in Delhi, India, and was raised in Nagoya, Japan. Her diverse upbringing inspired her curiosity about different societies and international affairs. She is interested in Asia's economic and societal developments, particularly in India, China, and Indonesia.



## Citations

Banister, J., Bloom, D. E., & Rosenberg, L. (2010, March). Population Aging and Economic Growth in China. *PROGRAM ON THE GLOBAL DEMOGRAPHY OF AGING*. [https://www.hsph.harvard.edu/wp-content/uploads/sites/1288/2013/10/PGDA\\_WP\\_53.pdf](https://www.hsph.harvard.edu/wp-content/uploads/sites/1288/2013/10/PGDA_WP_53.pdf)

CEIC. (2021). *India Employed Persons, 1970 - 2023*. CEIC. <https://www.ceicdata.com/en/indicator/india/employed-persons>  
*China Labour Force Participation Rate, 1990 - 2023*. (n.d.). CEIC. Retrieved October 16, 2023, from <https://www.ceicdata.com/en/indicator/china/labour-force-participation-rate>

Choudhury, P. K., & Kumar, A. (n.d.). How Much do Households Spend on Professional Higher Education in India? Results from a National Survey. *Indian Journal of Human Development*. 10.1177/09737030221099880

Clarisa, H. (2023, July 14). *Does Indonesia have laws regarding Maternity and Paternity Leave?* Medium. <https://medium.com/@hardianac/does-indonesia-have-laws-regarding-maternity-and-paternity-leave-2ed750c45b50>

The Economist. (2023, October 12). *Large parts of Asia are getting old before they get rich*. The Economist. <https://www.economist.com/leaders/2023/10/12/large-parts-of-asia-are-getting-old-before-they-get-rich>

European Commission. (2023, September 12). *3.1 Early childhood and school education funding*. Eurydice. <https://eurydice.eacea.ec.europa.eu/national-education-systems/germany/early-childhood-and-school-education-funding>

*Facts About Literacy Rate In India*. (n.d.). CARE India. Retrieved October 16, 2023, from <https://www.careindia.org/blog/literacy-rate-in-india/>

FCBI. (2013, December 26). *Fertility Decline in Indonesia and Its Relationship to Maternal Mortality*. NCBI. Retrieved October 15, 2023, from <https://www.ncbi.nlm.nih.gov/books/NBK201707/>

Federal Ministry of Education and Research. (n.d.). *Support for families*. Research in Germany. <https://www.research-in-germany.org/en/plan-your-stay/family/support-for-families.html>

Gubhaju, B. (2007, March). Fertility Decline in Asia: Opportunities and Challenges. *The Japanese Journal of Population*, 5(1). [https://www.ipss.go.jp/webj-ad/webjournal.files/population/2007\\_3/Gubhaju.pdf](https://www.ipss.go.jp/webj-ad/webjournal.files/population/2007_3/Gubhaju.pdf)

Heneveld, W. (1979). *INDONESIAN EDUCATION IN THE SEVENTIES: Problems of Rapid Growth*. *Southeast Asian Affairs*, 142-154. <https://www.jstor.org/stable/27908373>

*India Labour Force Participation Rate, 1990 - 2023*. (n.d.). CEIC. Retrieved October 16, 2023, from <https://www.ceicdata.com/en/indicator/india/labour-force-participation-rate>

*Indonesia Labour Force Participation Rate, 2005 - 2023*. (n.d.). CEIC. Retrieved October 16, 2023, from <https://www.ceicdata.com/en/indicator/indonesia/labour-force-participation-rate>

Lugo, M. A., Niu, C., & Yemtsov, R. (2021, November). *Rural Poverty Reduction and Economic Transformation in China: A Decomposition Approach*. Policy Research Working Paper. Retrieved October 23, 2023, from <https://openknowledge.worldbank.org/entities/publication/6e50f1e5-76c0-5b00-aa36-ec6d69f8d0c0>

Master, F., & Gibbs, E. (2023, January 17). *How China is seeking to boost its falling birth rate*. Reuters. <https://www.reuters.com/world/china/how-china-is-seeking-boost-its-falling-birth-rate-2023-01-17/>

Ministry of Human Resource Development. (2003). *PIB Press Releases*. PIB Press Releases. <https://archive.pib.gov.in/archive/releases98/lyr2003/rsep2003/06092003/r060920031.html>

*NATIONAL MULTIDIMENSIONAL POVERTY INDEX*. (2023, July 17). NITI Aayog. Retrieved October 16, 2023, from <https://niti.gov.in/sites/default/files/2023-08/India-National-Multidimensional-Poverty-Index-2023.pdf>

*New research helps explain why China's low birth rates are stuck*. (2023, June 1). *The Economist*. Retrieved October 18, 2023, from <https://www.economist.com/china/2023/06/01/new-research-helps-explain-why-chinas-low-birth-rates-are-stuck>

Nurhayati-Wolff, H. (2023, June 28). *Indonesia: household expenditure breakdown by category 2020*. Statista. Retrieved October 30, 2023, from <https://www.statista.com/statistics/1065696/indonesia-household-expenditure-breakdown/>

O'Neill, A. (2022, June 21). *China: fertility rate 1930-2020*. Statista. <https://www.statista.com/statistics/1033738/fertility-rate-china-1930-2020/>

O'Neill, A. (2022, June 21). *Indonesia: fertility rate 1895-2020*. Statista. <https://www.statista.com/statistics/1069651/total-fertility-rate-indonesia-historical/>

O'Neill, A. (2023, October 4). *India - fertility rate 2021*. Statista. <https://www.statista.com/statistics/271309/fertility-rate-in-india/>

Our World in Data. (2019, March 9). *Total factor productivity, 1970 to 2019*. Our World in Data. <https://ourworldindata.org/grapher/TFP-at-constant-national-prices-2011?time=1970..2019&country=CHN~IND~IDN>

Rathore, M. (2023, July 10). *India: dependency ratio*. Statista. Retrieved October 16, 2023, from <https://www.statista.com/statistics/1323770/india-dependency-ratio/>

Rush, A. (2011, September). *China's Labour Market*. Reserve Bank of Australia. Retrieved October 16, 2023, from <https://www.rba.gov.au/publications/bulletin/2011/sep/pdf/bu-0911-4.pdf>

Saliola, F., & Seker, M. (2011). *Total Factor Productivity Across the Developing World*. World Bank Document. <https://documents1.worldbank.org/curated/en/646931468157519398/pdf/682730BRI0ESN00LIC00Productivity023.pdf>

Statista. (2023, August 16). *Fertility rate Germany 1990-2022*. Statista. <https://www.statista.com/statistics/1087303/number-of-children-per-woman-germany/>

Schneider, T. (2020, March). *Shrinkonomics: Policy Lessons from Japan on Aging – IMF F&D*. International Monetary Fund. <https://www.imf.org/en/Publications/fandd/issues/2020/03/shrinkonomics-policy-lessons-from-japan-on-population-aging-schneider>

Shukla, R., & Bordoloi, M. (2013, January 3). *Why large section of Indian households today prefer private education over government's?* *The Economic Times*. Retrieved October 23, 2023, from <https://economictimes.indiatimes.com/opinion/et-commentary/why-large-section-of-indian-households-today-prefer-private-education-over-governments/articleshow/17866580.cms?from=mdr>

Singh, S., & Ram, D. M. (2020, December). *Analysis of Household Expenditure on Elementary Education in India*. *International Journal of Creative Research Thoughts (IJCRT)*, 8(12). ISSN2320-2882

Statista. (2023, May 2). *Indonesia: enrollment rate by education level 2021*. Statista. <https://www.statista.com/statistics/1127610/indonesia-enrollment-rate-by-education-level/>

Statista. (2023, August 16). *Fertility rate Germany 1990-2022*. Statista. <https://www.statista.com/statistics/1087303/number-of-children-per-woman-germany/>

Textor, C. (2023, January 31). *China: children and elderly dependency ratio 2100*. Statista. Retrieved October 16, 2023, from <https://www.statista.com/statistics/251535/child-and-old-age-dependency-ratio-in-china/>

Textor, C. (2023, October 4). *China: fertility rate 2021*. Statista. <https://www.statista.com/statistics/270164/fertility-rate-in-china/>

Thomasson, E. (2021, May 13). *As births slow in China and US, ex-laggard Germany bucks trend*. Reuters. Retrieved November 5, 2023, from <https://www.reuters.com/world/births-slow-china-us-ex-laggard-germany-bucks-trend-2021-05-13/>

*TOTAL FERTILITY RATE Demographics Population Change 1. INDICATOR (a) Name: Total fertility (b) Brief Definition: The average nu.* (2007, June 15). the United Nations. Retrieved October 23, 2023, from [https://www.un.org/esa/sustdev/natlinfo/indicators/methodology\\_sheets/demographics/total\\_fertility\\_rate.pdf](https://www.un.org/esa/sustdev/natlinfo/indicators/methodology_sheets/demographics/total_fertility_rate.pdf)

*Total fertility rate (per woman).* (n.d.). World Health Organization (WHO). Retrieved October 23, 2023, from <https://www.who.int/data/gho/indicator-metadata-registry/imr-details/123>

United Nations. (2007, June 15). *TOTAL FERTILITY RATE Demographics Population Change 1. INDICATOR (a) Name: Total fertility (b) Brief Definition: The average nu. the United Nations.* [https://www.un.org/esa/sustdev/natlinfo/indicators/methodology\\_sheets/demographics/total\\_fertility\\_rate.pdf](https://www.un.org/esa/sustdev/natlinfo/indicators/methodology_sheets/demographics/total_fertility_rate.pdf)

United Nations. (2015). *Below-replacement fertility in China: Policy response is long overdue. the United Nations.* [https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/undp\\_egm\\_201511\\_policy\\_brief\\_no\\_5.pdf](https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/undp_egm_201511_policy_brief_no_5.pdf)

United Nations. (2017, December). *Government policies to raise or lower the fertility level. Department of Economic and Social Affairs Population Division.* [https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/files/documents/2020/Jan/un\\_2017\\_factsheet10.pdf](https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/files/documents/2020/Jan/un_2017_factsheet10.pdf)

Wicaksono, P. (2022). *The Financing of Education in Indonesia.* UNESCO.

World Bank. (2020). *Literacy rate, adult total (% of people ages 15 and above) - China.* The World Bank. <https://data.worldbank.org/indicator/SE.ADT.LITR.ZS?locations=CN>

World Bank. (2021). *Fertility rate, total (births per woman) - Japan.* The World Bank. <https://data.worldbank.org/indicator/SP.DYN.TFRT.IN?locations=JP>

World Bank. (2022). *Fertility rate, total (births per woman).* World Bank Gender Data Portal. <https://genderdata.worldbank.org/indicators/sp-dyn-tfirt-in/>

World Bank. (2022). *FOUR DECADES OF POVERTY REDUCTION IN CHINA*. <https://openknowledge.worldbank.org/server/api/core/bitstreams/e9a5bc3c-718d-57d8-9558-ce325407f737/content>

World Bank. (2022). *Labor force, total - Indonesia* | Data. World Bank Data. <https://data.worldbank.org/indicator/SL.TLF.TOTL.IN?locations=ID>

World Bank. (2023, September 19). *Literacy rate, adult total (% of people ages 15 and above) - Indonesia*. The World Bank. <https://data.worldbank.org/indicator/SE.ADT.LITR.ZS?locations=ID>

World Bank, Poverty and Inequality Platform. (2023). *Poverty Calculator*. Poverty and Inequality Platform. <https://pip.worldbank.org/poverty-calculator>

Zhang, L., Brooks, R., Ding, D., Ding, H., He, H., Lu, J., & Mano, R. (December). *China's High Savings: Drivers, Prospects, and Policies*. *IMF working paper*.



The text of this work is licensed under the terms of "Creative Commons Attribution-ShareAlike same conditions 4.0 international", CC BY-SA 4.0 (available at: <https://creativecommons.org/licenses/by-sa/4.0/legalcode.en>)