How to Cite:
Fitri, Y. E. (2024). The impact of education and health investment on economic progress. *International Journal of Economic Perspectives*, *18*(9), 1327–1337. Retrieved from https://ijeponline.org/index.php/journal/article/view/641

The impact of education and health investment on economic progress

Yulita Eka Fitri
Homebase Lecturer of Diploma Three Nursing Study Program, Sekolah Tinggi Ilmu Kesehatan Al-Ma'arif, South Sumatera, Indonesia

***Abstract*---**The Sustainable Development Goals (SDGs) are global actions to address challenges that impact people and countries, are inclusive, equitable, integrated, interdependent, and people-centered. Therefore, the relationship between society, education, economy, and health is discussed and interrelated to provide a perspective on development progress and sustainability. The purpose of this study was to determine the impact of education and health on economic growth. This research method is a Literature Review using the PubMed and MDPI databases, as well as from the Google Scholar search engine. The results are 10 extracted articles. The economy impacts access to quality education and health, limits economic activity, and reduces sustainability. Many people live in poor countries because of a sick economy with high unemployment. This global and widespread challenge continues and limits human and state potential. Sustainable progress requires educated and empowered people who contribute to economic growth and have access to quality health services that can contribute to greater development and sustainable capabilities. Relevant education, training, and skills to address socio-economic and health challenges are essential for development and sustainability. Strengthening socio-educational-economic-health links will advance development and sustainability.

***Keywords*---**Impact of Education, Impact of Health, Economic Progress.

Introduction

Economic growth is the process of changing the economic conditions of a country continuously towards a better condition during a certain period (Ding et al., 2021). Economic growth can also be interpreted as the process of increasing the production capacity of an economy which is manifested in the form of an increase in national income (Chang et al., 2022). The existence of economic growth is an

Corresponding author: *Fitri, Y.E., Email: yulitaekafitri@gmail.com*
Submitted: 09 July 2024, Revised: 18 August 2024, Accepted: 23 Sept 2024

indication of the success of economic development Herlan (2009) in Situmorang (2007) (X. Zhang & Xu, 2022).

Economic growth is influenced by various factors including natural resources, human resources (HR), capital formation and technological progress. Kotler (1997) in Situmorang (2007) stated that a nation's economy is influenced by the nation's economic endowments including natural resources, population, human capital, physical capital, technology and infrastructure (Elmassah & Hassanein, 2022).

Education is a form of human resource investment that is as important as physical capital investment to achieve a country's long-term economic success (Bauer, 2019). The quality of human resources is essential in improving the quality of production factors (Yuriah et al., 2022). The quality of human resource production factors is greatly influenced by the level of education and health. Education is a process that aims to increase and improve skills, knowledge, independence and personality which are the basic capital needed to do work (Yuriah et al., 2023). An educated and trained workforce is an important requirement for sustainable economic growth. All of this can only be achieved with good health and education (Y. Zhang & Liu, 2022).

A study conducted by Benhabib and Spiegel (1994) proposed an empirical growth model in which human capital is considered with progress in education and physical capital through technology imports. The results of this study indicate that human capital affects economic growth in two ways. First, human capital affects the level of domestic production, similar to Romer's study (1989). Second, human capital affects the level of technology adoption of innovating economies. Nelson and Phelps' study (1966) validated that education plays an important role in economic growth (Wiksadana & Sihaloho, 2021).

Education is the learning of knowledge, skills, and habits of a group of people that are transferred from one generation to the next through teaching, training, or research (Anowor et al., 2023). Education often occurs under the guidance of others, but it is also possible to be self-taught. Any experience that has a formative effect on the way people think, feel, or act can be considered education. Education is generally divided into stages such as preschool, elementary school, high school and then college, university or apprenticeship (Apostu et al., 2022).

According to Todaro (2004), education and health are fundamental development goals, health is the core of well-being, and education is the main thing to achieve a satisfying and valuable life. Education is not only a human right but also a strategic tool for building society (Guo et al., 2019). The level of public health can be seen from various indicators, one of which is the infant mortality rate (Sepriani et al., 2024). If the infant mortality rate decreases, it means that health is improving, and economic growth is also getting better (Muthoharoh et al., 2022). According to Bloom and Sevilla (2001) the size of life expectancy and infant mortality as a measure of health that affects gross domestic product. While health is measured by life expectancy has appeared in many cross-country regressions and found a positive and significant effect on the level of economic growth, this does not establish that health directly benefits growth (Cohee et al., 2021).

According to the results of Bloom and Sevilla, it shows that a one-year increase in life expectancy of the population contributes to a 4% increase in output (Yuriah et al., 2024). Bloom and Sevilla have added the production function of the economic growth model to take into account two additional variables that microeconomists have identified as basic components of human resources: work experience and health (Zajacova & Lawrence, 2024).

Based on research conducted by Ladung (2018) it states that government spending on education on economic growth has a positive effect, while government spending on health on economic growth has a negative effect. Research conducted by Puspitasari, Sarfiah and Rusmijati (2017) stated that government spending in education and health has a significant positive effect on economic growth. However, research conducted by Dewi (2019) stated that government spending in education and health has a partial and simultaneous effect on economic growth. This shows the inconsistency of research results from the effect of government spending in education and health on economic growth which has fluctuating developments from year to year. Therefore, the purpose of this study is to determine the Impact of Education and Health Investment on Economic Progress.

Method

This research uses a Literature review method. Framework of Inclusion and Exclusion Criteria. Inclusion criteria for articles: 1) Articles are published in English and Indonesian, 2) Articles are published in 2014-2024, 3) These articles discuss several the Impact of Education and Health Investment on Economic Progress, and 4) There are no specific criteria for target countries. Exclusion criteria for articles are reports and comments.

Article Search Flow Literature search utilizes articles for 2014-2024 limited to those using English and Indonesian, free full text, data for the last 10 years. Keywords must appear in the title/abstract. The articles used were from the *PubMed, MDPI*, and *Google Scholar*. Search was performed using keywords *(((((“Impact”) OR (“influence”)) OR (("relationship")) AND (“Education”)) AND (“Health”)) AND (“Economy”)) OR (“financial inclusion”)) OR (“economic growth”)) OR (“financial institutions’)))*. Then the next stage is the selection of articles according to the criteria set by the researcher, and it is in accordance with the research questions. The articles appearing are then sorted until no similar articles are found. Then sorted based on the inclusion and exclusion criteria that have been determined extracted. Extraction of articles by author, country, year, and search results performed. Article Selection During an article search, 34 articles were from the PubMed database; 31 database MDPI, and 23 Search Engine Google Scholar. After a review of all those articles were filtered based on relevance, there were 43 articles found. Next, Form those articles, a selection was done to find appropriate references about the factors affecting the prevalence of hypertension in pregnancy. Then there were 10 articles obtained. Those will be used for Literature Review Research. The author considered the titles and abstracts of all articles to be used as inclusion criteria. Full text studies have been conducted

and independently reviewed against these criteria. This therefore leaves 10 articles for final review.

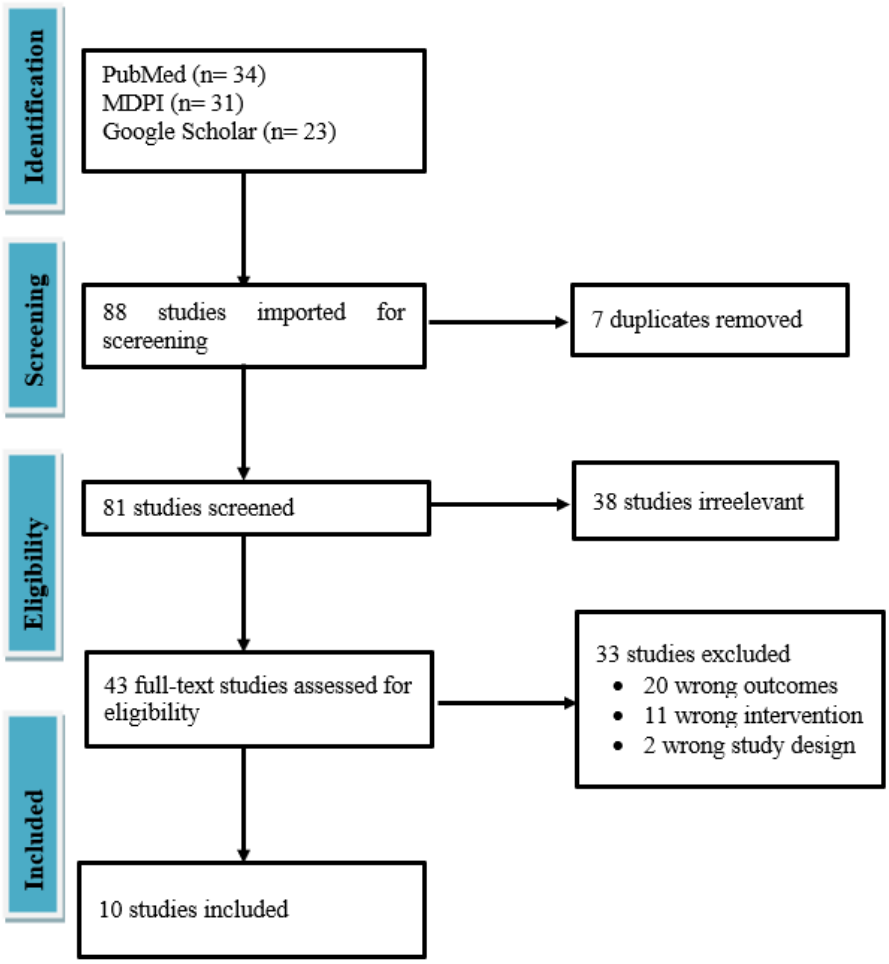

Figure I. Preparation steps based on PRISMA Chart

Results and Discussion

The identification results obtained from the search method in the online library of PubMed, MDPI, and Google Scholar obtained up to 88 search results data. Finder contains selections including the results of the same search data and with the same search title. After the screening step, the inclusion step was carried out by matching the study data with the inclusion criteria set by the researcher, including the study of Impact of Education and Health Investment on Economic Progress in full text of articles from 2014-2024 obtained from international journals. The research results are collected and selected to include documents meeting the research criteria. The results showed there were 10 articles obtained

that matched the research criteria, and the process then continued to provide important reflections.

Table I. Article Extraction

No	Author/Year	Country	Result
1	(Pasara et al., 2020)	Southeast Africa	Results showed that education Granger causes health improvements, with health improvements in turn fairly associating to Granger cause economic growth in Zimbabwe. Thus, the effect of education on economic growth is not direct, but works through improved health, pointing to the conclusion that health is a transmission mechanism through which education drives economic growth. No feedback effect was established from health to education and from economic growth to education and health. Thus, results suggest the need for a holistic policy approach which integrates education and health policies in a bid to drive economic growth, since education has no effect on economic growth in its own domain, but through health.
2	(Ali & Khan, 2023)	China	This study investigates the economic returns of health status, education level, and social interaction, that is, whether and how human capital and social interaction affect employment and income premiums.
3	(Zhan et al., 2022)	China	The empirical analysis reveals that financial institutional development and education report a significant increase in life expectancy and meaningful reduction in mortality rate in the long-run. Based on these findings, the study may deliver intuitive policy implications regarding improvement in health conditions that are imperative for promoting economic growth in the long-run.

No	Author/Year	Country	Result
4	(Cerf, 2023)	South Africa	A social-education-economy-health nexus is contextualized that aligns with the SDGs and converges to support growth and sustainability, and realize social, education, economic and health value. Education, training and skilling that are relevant to address socioeconomic and health challenges are critical for development and sustainability. Strengthening the social-education-economy-health nexus will advance development and sustainability. Investment in low- and middle-income and African countries, through public–private-philanthropy partnerships to fund social, economic, education and health initiatives, will foster development and sustainability.
5	(Simatupang et al., 2022)	Indonesia	This study found that financial inclusion has important contribution to human development. Financial inclusion has positive effect to the human development index components along with government expenditures in education and health sector. As the consequences, in the future the government should prioritize its budget in education and health sector in order to increase human resources quality in Indonesia.
6	(Umair et al., 2024)	Pakistan	This suggests a complementary relationship between health, education, and LF in driving EG. Moreover, our findings highlight the temporal significance of health and education: Health plays a more crucial role in the short run, while education's impact is more substantial in the long run. Furthermore, the Granger causality results indicate that LF, health, and education significantly contribute to EG. It is advisable for the government to prioritize investments in the health and education sectors. This approach can empower individuals to actively and effectively participate in economic activities, eventually contributing to the overall economic output of the nation.
7	(Javed, 2021)	Pakistan	The results depict that better health has implications on GDP while there exists convergence from short period to longer span. While empirical results show that economic growth gets more affected by education in a shorter period as compared to a longer period. RAMSEY RESET test revealed that this model was free of any misspecification and recursive measure also confirmed the same for this study.

No	Author/Year	Country	Result
8	(Sarwar et al., 2019)	Saudi Arabia	Education and health have confirmed insignificant coefficients for economic growth and carbon emission, which mention that higher education and better health conditions are not useful for boosting economic development and for controlling environmental degradation process. Empirical estimations have reported that higher capital investment leads to increase the economic process and carbon emission. Higher educational standard and capital investment helps to control the health issues, in the long- and short-run. On contrary, higher carbon emission creates health issues. The given results can provide support to the economic, social, and environmental policy makers during policy decisions.
9	(Cetin & Dogan, 2015)	Romania	Using ARDL bounds testing and Johansen-Juselius approaches for cointegration, the results show that the variables are cointegrated. In addition, economic growth is mainly determined by health, energy consumption and education in the long-run. Using Toda-Yamamoto causality test, the results show that there is a long-run causation linkage running from health and energy consumption to economic growth.
10	(Irawan & Puspaningtyas, 2022)	Denmark	Education has a positive relationship to economic growth. When the economy in Denmark is high, education will also improve, but if higher education investment will decrease, high economic growth also has a relationship, with the high investment also has a good effect on education. the same like education, investment also has a good influence on economic growth in Denmark also there is The investing choices made show that the expenses paid for schooling have advantages, we can see some importance for improving Education at Denmark because Education can affect many aspects such as economy and investment.

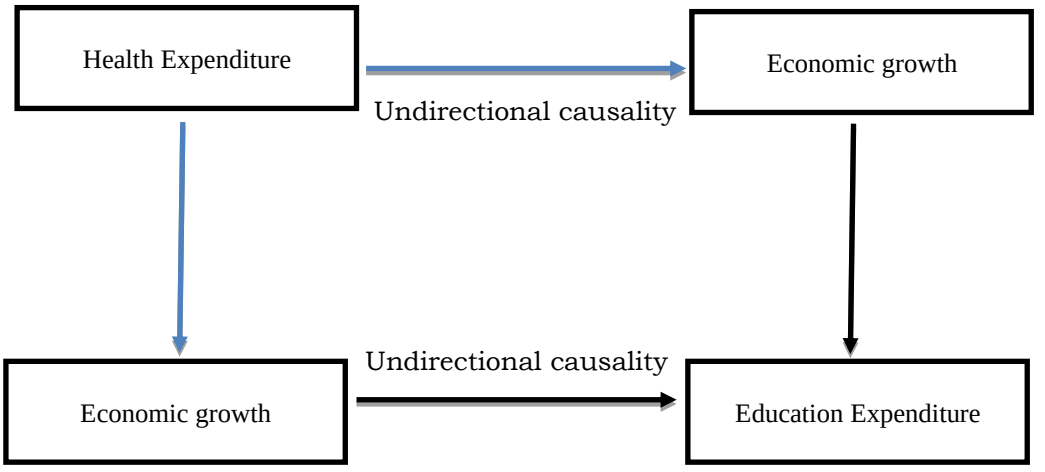

Figure 2. Flowchart of Toda-Yamamoto Causality Test Results

One-way causality between Health Expenditure and Economic Growth

The results of the Toda-Yamamoto causality analysis show that there is a one-way causality between the health expenditure variable and the economic growth variable. One-way causality occurs because the health expenditure variable affects the economic growth variable but economic growth does not affect health expenditure. Health expenditure is used in financing the procurement of health goods, procurement of drugs, financing of health centers, health programs, financing of hospitals, and so on so that health service facilities are obtained properly by the community.

If health is guaranteed, community productivity will increase by itself so that it will have a positive effect on the Gross Regional Domestic Product (GRDP). The ratio of health expenditure to total expenditure based on its realization data has not yet reached 10 percent (see Appendix 7) but has given positive results for economic growth. A good level of health will increase community productivity.

Bedir (2016) states that health expenditure is an investment for human capital, if there is an increase in health expenditure, it will increase community productivity. Health expenditure will also increase life expectancy, reduce morbidity and infant mortality, so that good health levels have a positive effect on Gross Domestic Product (GDP).

Good health will also improve the quality of life and welfare of the community. On the other hand, health expenditure is not affected by economic growth. The World Health Organization (WHO) states that public welfare management must be carried out properly and responsibly for a service is the core of good governance. Public health is always a national priority, the government's responsibility for this must nbe sustainable and permanent (Todaro, 2011: 497).

Health is an important factor in the context of moving towards a prosperous society. So the government and local governments cannot simply ignore the allocation for health because health is vital in people's lives. When there is a decline in economic growth, the government cannot simply reduce the allocation for health because when the demand for health facilities is high, the health allocation must be able to balance the demand. It is not a good thing when a region has good potential in producing an output but its public health is disrupted and health facilities are also poor. The existing potential will simply decrease if public health is not properly facilitated.

Conclusion

Education has a positive relationship with economic growth, as education can influence many aspects such as economy and investment. It is important to understand the influence of various factors on the overall performance of economic activities in any country. The results also show that there is a one-way relationship between the variables of health expenditure and economic growth and the variables of education expenditure and economic growth. Higher levels of education enable people to understand health issues.

Integrated policies that address health and education needs, alongside initiatives to promote higher labor force participation through skills development programs, job creation initiatives, and incentives for labor force engagement, will be key to unlocking the full potential of human capital and achieving lasting economic prosperity. Recognizing the complementary relationship between health, education, and labor force participation, policymakers should strive to foster synergies among these sectors by ensuring coordination and integration of policies across these sectors, coupled with ongoing monitoring and evaluation, will be critical to maximizing the impact of investments in human capital.

Acknowledgments

We are grateful to two anonymous reviewers for their valuable comments on the earlier version of this paper.

References

Ali, T., & Khan, S. (2023). Health, Education, and Economic Well-Being in China: How Do Human Capital and Social Interaction Influence Economic Returns. *Behavioral Sciences*, *13*(3), 209. https://doi.org/10.3390/bs13030209

Anowor, O. F., Ichoku, H. E., Onodugo, V. A., Ochinanwata, C., & Uzomba, P. C. (2023). Does investment in education and health impact youth employment outcomes? Evidence from Sub-Saharan Africa. *Cogent Economics & Finance*, *11*(1), 2160128. https://doi.org/10.1080/23322039.2022.2160128

Apostu, S. A., Mukli, L., Panait, M., Gigauri, I., & Hysa, E. (2022). Economic Growth through the Lenses of Education, Entrepreneurship, and Innovation. *Administrative Sciences*, *12*(3), 74. https://doi.org/10.3390/admsci12030074

Bauer, U. E. (2019). Community Health and Economic Prosperity: An Initiative of the Office of the Surgeon General. *Public Health Reports*, *134*(5), 472–476. https://doi.org/10.1177/0033354919867727

Cerf, M. E. (2023). The social-education-economy-health nexus, development and sustainability: Perspectives from low- and middle-income and African countries. *Discover Sustainability*, *4*(1), 37. https://doi.org/10.1007/s43621-023-00153-7

Cetin, M., & Dogan, I. (2015). The Impact Of Education And Health On Economic Growth: Evidence From Romania (1980-2011). *Romanian Journal of Economic Forecasting*.

Chang, Y.-C., Chang, T., & Wang, M.-C. (2022). Are Healthcare Expenditures Related to Economic Growth in China? Bootstrap ARDL Approach. *Frontiers in Public Health*, *9*, 766091. https://doi.org/10.3389/fpubh.2021.766091

Cohee, L. M., Halliday, K. E., Gelli, A., Mwenyango, I., Lavadenz, F., Burbano, C., Drake, L., & Bundy, D. A. P. (2021). The Role of Health in Education and Human Capital: Why an Integrated Approach to School Health Could Make a Difference in the Futures of Schoolchildren in Low-Income Countries. *The American Journal of Tropical Medicine and Hygiene*, *104*(2), 424–428. https://doi.org/10.4269/ajtmh.20-0779

Ding, X., Huang, Y., Gao, W., & Min, W. (2021). A Comparative Study of the Impacts of Human Capital and Physical Capital on Building Sustainable Economies at Different Stages of Economic Development. *Energies*, *14*(19), 6259. https://doi.org/10.3390/en14196259

Elmassah, S., & Hassanein, E. A. (2022). Can the Resource Curse for Well-Being Be Morphed into a Blessing? Investigating the Moderating Role of Environmental Quality, Governance, and Human Capital. *Sustainability*, *14*(22), 15053. https://doi.org/10.3390/su142215053

Guo, L., Huang, J., & Zhang, Y. (2019). Education Development in China: Education Return, Quality, and Equity. *Sustainability*, *11*(13), 3750. https://doi.org/10.3390/su11133750

Irawan, C. B., & Puspaningtyas, M. (2022). *The Importance of Education with Health in Increasing Economic Growth and Investment in Denmark*. *7*(1).

Javed, R. (2021). Nexus Between Economic Growth, Health, And Education In Pakistan: An Ardl Bound Testing Approach. *International Journal of Economics and Financial Issues*, *11*(6), 56–65. https://doi.org/10.32479/ijefi.12535

Muthoharoh, B. L., Yuriah, S., Gustiani, R., Agustina, Y. R., Indrawati, I., & Mufdlilah, M. (2022). Efficacy of early initiation of breastfeeding (EIB) for preventing hypothermia in newborns. *Journal of Health Technology Assessment in Midwifery*, *5*(2), 82–95. https://doi.org/10.31101/jhtam.2211

Pasara, M. T., Mutambirwa, T. K., & Diko, N. (2020). The Trivariate Causality among Education, Health, and Economic Growth in Zimbabwe. *Sustainability*, *12*(4), 1357. https://doi.org/10.3390/su12041357

Sarwar, S., Alsaggaf, M. I., & Tingqiu, C. (2019). Nexus Among Economic Growth, Education, Health, and Environment: Dynamic Analysis of World-Level Data. *Frontiers in Public Health*, *7*, 307. https://doi.org/10.3389/fpubh.2019.00307

Sepriani, P., Yuriah, S., & Juniarti, S. (2024). *Empowerment of women of fertilizing age regarding health education for early detection of neccical cancer using method visual inspection of acetic acid (Iva Test)*. *18*(1).

Simatupang, M., Sinaga, B. M., & Hartoyo, S. (2022). *Impact of Government Expenditure in Education, Health Sectors and Financial Inclusion on Human Development in Indonesia*. *5*(2).

Umair, M., Ahmad, W., Hussain, B., Fortea, C., Zlati, M. L., & Antohi, V. M. (2024). Empowering Pakistan's Economy: The Role of Health and Education in

Shaping Labor Force Participation and Economic Growth. *Economies*, *12*(5), 113. https://doi.org/10.3390/economies12050113

Wiksadana, W., & Sihaloho, E. D. (2021). Does Government Spending in Health, Education, and Military Improve Welfare in Asian Developing Countries? *Jurnal Ekonomi & Studi Pembangunan*, *22*(1), 59–74. https://doi.org/10.18196/jesp.v22i1.9337

Yuriah, S., Ananti, Y., & Nurjayanti, D. (2024). Dynamics of the experience of sexual violence and its impact on girls in Ogan Komering Ulu Regency. *International Journal of Health Sciences*, *8*(S1), 579–592. https://doi.org/10.53730/ijhs.v8nS1.14860

Yuriah, S., Juniarti, S., & Sepriani, P. (2023). Midwifery care for Mrs "Y" at BPM Soraya Palembang. *International Journal of Health Sciences*, *7*(S1), 2966–2984. https://doi.org/10.53730/ijhs.v7nS1.14631

Yuriah, S., Kartini, F., & Isnaeni, Y. (2022). Experiences of women with preeclampsia. *International Journal of Health & Medical Sciences*, *5*(3), 201–210. https://doi.org/10.21744/ijhms.v5n3.1901

Zajacova, A., & Lawrence, E. M. (2024). The Relationship Between Education and Health: Reducing Disparities Through a Contextual Approach. *Annual Review of Public Health*, *39*(1), 273–289. https://doi.org/10.1146/annurev-publhealth-031816-044628

Zhan, Z., Tao, R., Niaz, M. U., & Kirikkaleli, D. (2022). Do Higher Education and Financial Institutions Improve Health in China? A New Perspective. *Frontiers in Public Health*, *10*, 874507. https://doi.org/10.3389/fpubh.2022.874507

Zhang, X., & Xu, Y. (2022). Business Cycle and Public Health: The Moderating Role of Health Education and Digital Economy. *Frontiers in Public Health*, *9*, 793404. https://doi.org/10.3389/fpubh.2021.793404

Zhang, Y., & Liu, J. (2022). Does Education Affect Economic Growth? A Re-Examination of Empirical Data from China. *Sustainability*, *14*(23), 16289. https://doi.org/10.3390/su142316289