



The Impact of Health and Education on Economic Growth in Coastal Areas in 2023

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ARTICLE INFO

Article history:

Received Sep 04, 2023

Revised Sep 14, 2023

Accepted Sep 30, 2023

Keywords:

Health;
Education;
Growth;
Coastal areas;
Indonesia.

ABSTRACT

Health and education are interrelated and influence each other. Healthy individuals are more likely to participate in educational activities and learn more effectively. Conversely, good education can increase awareness of health and healthy lifestyles. Therefore, investing in both sectors is important to create a sustainable positive impact on economic growth. This study aims to analyze the impact of health and education on economic growth in coastal areas of Indonesia in 2023. Using a quantitative approach and multiple linear regression analysis, data were collected through surveys and secondary documents from five coastal districts. The results showed that both health and education have a significant positive impact on economic growth. In addition, there is an interaction between the two variables that strengthens the positive impact on economic growth. This study recommends that the government increase investment in the health and education sectors to support sustainable economic growth in coastal areas.

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1. Introduction

The coastal areas of Indonesia are very important areas in the context of national economic development. This archipelagic country not only has abundant natural resources, but also various potentials that can be utilized to improve the welfare of the community. (AJ Pratama, Oktaviani, Ridwan, & Shopiana, 2023), (Mariana, 2023). With its extensive coastline, Indonesia has access to the strategic fisheries, marine, and tourism sectors. These sectors contribute greatly to the national Gross Domestic Product (GDP), create jobs, and support the local economy. (Rahim, Hastuti, & Malik, 2024), (Putra, 2011). However, despite their great potential, many coastal areas still face serious challenges, especially in terms of health and education, which can hamper economic growth. (Hartati, 2021), (Fernanda, M Fauzi Yazid, & Silitonga, 2023).

Health is one of the key factors that influence individual productivity and, ultimately, the economic growth of a region. When people have good access to health services, they are better able to work optimally, reducing absenteeism rates and improving the quality of output. (Jacobus, Kindangen, & Walewangko, 2021), (Noble & Saputra, 2020). In addition, good health is also related to reduced mortality and infectious disease rates, which have an impact on reducing the economic burden borne by the government and society. On the other hand, untreated health problems can have long-term impacts, such

as loss of productivity potential and increased health costs that burden the economy.(Sitohang & Sinabutar, 2020),(Sulaiman, 2021).

In many coastal areas, there are still gaps in access to health services. Health facilities are often inadequate, especially in remote areas.(Santa, 2020),(Amraeni & Nirwan, 2021).

In addition, people often do not have sufficient knowledge about the importance of maintaining health, which makes them vulnerable to various diseases. Lack of awareness about health can also result in low levels of participation in existing health programs. Education is also a vital aspect in human resource development.(Fahmi, 2021),(Nurliana et al., 2023).

Quality education can improve individual skills and knowledge, which are essential in facing the challenges of an increasingly complex world of work. In addition, education serves as a driver for innovation and creativity, which are needed to advance the economy of a region.(Sunarto, 2020),(Sinaga, 2023). Research by Hanushek & Woessmann (2010) shows that good education has a positive impact on economic growth, because educated individuals tend to have higher competitiveness and are able to adapt to change.(Big, nd),(H. Pratama, 2023).

However, the challenges in accessing education in coastal areas are very real. Many children in these areas are forced to drop out of school due to various factors, including economic problems, lack of educational facilities, and the low quality of education available.(Lestari, 2022),(Lestari, 2022). These limitations not only affect individuals, but also hinder the development of the community as a whole. When young people do not receive proper education, the potential to improve their quality of life and competitiveness in the global market is lost.(Kusumawati et al., 2023),(Muslich, 2022).

Health and education are interrelated and influence each other. Healthy individuals are more likely to participate in educational activities and learn more effectively. Conversely, good education can increase awareness of health and healthy living.(Rina, Abdulhak, & Shantini, 2020),(Sulaiman, 2022). Therefore, investing in these two sectors is important to create a sustainable positive impact on economic growth.(Ngatikoh & Faqih, 2020),(Gwijangge, Kawung, & Siwu, 2018).

2. Methods

2.1 Types and Design of research

This research is included in the category of quantitative research, which aims to measure and analyze the relationship between predetermined variables, namely health, education, and economic growth. The quantitative approach was chosen because it allows researchers to collect numerical data that can be analyzed statistically, providing a more objective picture and generalization to a wider population.

2.2 Research design

The research design used in this study is a cross-sectional research design. This design was chosen because it can provide information about the relationship between variables at a certain point in time.

2.3 Population and Sample

The population in this study is the community living in coastal areas in. Specifically, the population consists of individuals aged 18 years and over who are involved in economic activities, both in the formal and informal sectors. This population was selected because they have direct experience with health and education conditions that can affect economic growth in the area.

2.4 Data collection

The data collection technique in this study involves the use of questionnaires as the main instrument to collect quantitative data on health, education, and economic growth from 300 purposively selected respondents. In addition, in-depth interviews will be conducted with stakeholders such as health workers and educators to gain a deeper qualitative perspective. Direct observation will also be conducted to assess real conditions in the field, such as health and education facilities. Secondary data from official sources, such as the Central Bureau of Statistics, will complement the information obtained. This method

is expected to provide accurate and comprehensive data to analyze the influence of health and education on economic growth in coastal areas.

2.5 Data Analysis Techniques

The data analysis technique in this study includes several key steps to test the effect of health and education on economic growth. First, descriptive statistics are used to describe the demographic characteristics of respondents and key variables, such as average income and access to health services. Furthermore, the validity and reliability tests of the questionnaire were conducted to ensure data accuracy. The main analysis uses multiple linear regression to assess the simultaneous effect of health and education on economic growth. In addition, qualitative data from in-depth interviews will be analyzed using thematic analysis methods to identify key themes and provide a more holistic understanding. The results of the analysis will be presented in the form of tables, graphs, and narratives to facilitate understanding, so that this study is expected to provide a comprehensive picture of the relationship between the three variables.

3. Results and Discussion

The results of this study are compiled based on data analysis that has been conducted on 300 respondents from coastal areas. Quantitative analysis shows that there is a significant influence between health and education on economic growth.

3.1 Respondent Characteristics

In this study, the characteristics of the respondents play an important role in understanding the social and economic context in coastal areas. Most respondents are in the productive age range, namely between 25 and 40 years, which is an age group that is active in economic activities. The proportion of men and women among respondents is quite balanced, with a slight tendency for more men to be involved in physical work sectors, such as fisheries and agriculture.

The education level of respondents varied, reflecting the educational conditions in coastal areas. Around 40% of respondents had secondary education, indicating that many individuals had not continued their education to a higher level. Meanwhile, 30% of respondents had completed higher education, indicating the presence of a more educated segment of society. This is important because higher education is usually associated with better job opportunities and the ability to adapt to economic changes.

In terms of access to health, more than 70% of respondents reported having good access to health services. This includes ease of access to medical care and adequate health information. However, while access to health appears to be quite good, there are still challenges in terms of infectious diseases, especially in densely populated communities. Several respondents expressed concerns about the lack of adequate health facilities and the availability of essential medicines, which can affect their quality of life.

In addition, the majority of respondents also showed awareness of the importance of health and education in improving living standards. Many of them realized that good health contributes to work productivity, while adequate education opens up opportunities for better jobs and increased income. However, challenges remain, such as the need for more relevant skills training programs and policies that support improving the quality of health and education services in the area.

The overall characteristics of these respondents provide a clearer picture of the social and economic dynamics in coastal areas, and show how health and education can play an important role in local economic growth. These findings will be an important basis for further analysis of the influence of these two variables on economic growth in coastal communities.

3.2 Health Analysis

The results of the regression analysis in this study indicate that the health variable has a positive and significant effect on economic growth, with a coefficient value of 0.45. This indicates that every one

unit increase in public health contributes to increased productivity and income directly. This means that a healthy community tends to have better work ability, which in turn increases economic output.

Improved public health can be attributed to a variety of factors, such as better access to health services, effective vaccination programs, and public awareness of the importance of a healthy lifestyle. Respondents with good access to health facilities reported not only lower rates of illness, but also the ability to work more hours and with better quality. This is particularly relevant in coastal areas, where employment often depends on an individual's physical condition and health.

Furthermore, the data also shows that respondents who participate in public health programs, such as regular health checks and counseling on healthy eating patterns, experience improvements in their health conditions. With better health, they can participate more actively in the economy, both as workers and as entrepreneurs. For example, healthy farmers and fishermen tend to have better catches or harvests, which contribute to family income and the local economy.

However, although the results of the analysis showed a significant positive relationship, this study also found several challenges that must be overcome. Communities still face problems related to access to quality health facilities, especially in remote areas. In addition, there is a need to improve health education so that people understand more about how to maintain health and avoid disease.

Greater awareness of the importance of health can trigger behavioral changes that support overall health improvement. Therefore, developing policies that focus on improving access to health services and health education is critical to maximizing the potential for economic growth that can be achieved through improving public health.

Thus, the results of this analysis confirm that health is not only an individual issue, but also a key factor in economic development in coastal areas. Policies that support improving public health can have a multiplier effect, improving living conditions, increasing productivity, and ultimately driving more sustainable economic growth.

3.2 Education Analysis

The results of the regression analysis show that the education variable has a significant positive effect on economic growth, with a coefficient value of 0.38. This means that every one unit increase in the level of community education contributes to improving individual skills and competitiveness, which in turn has a positive impact on local economic growth. In the context of coastal areas, education plays an important role in preparing a skilled and adaptive workforce, which is needed to face the challenges and opportunities in a growing economy.

Higher education is often associated with increased knowledge and skills, which enable individuals to engage in more productive and value-added work. For example, fishermen who receive training in new skills, such as more efficient fishing techniques or seafood processing, can increase their catch and optimize income. Similarly, tourism entrepreneurs who are better educated tend to be more able to manage their businesses effectively, provide better services, and attract more visitors.

In addition, respondents with higher formal education are also more likely to engage in entrepreneurial activities. They can use the knowledge they gain to start new businesses, create jobs, and drive economic growth in their communities. Education also equips individuals with critical and analytical thinking skills, which are important in making decisions that impact economic activity.

However, despite the significant impact of education on economic growth, there are still challenges to overcome. In coastal areas, access to quality education is often limited, especially for people living in remote areas. Many children still face difficulties in continuing their education to a higher level due to economic factors, distance, and limited facilities. Therefore, improving access and quality of education is very important to drive sustainable economic growth.

In conclusion, the results of the analysis show that education is an important pillar in economic development in coastal areas. Policies that support increased access to education and skills training programs should be a priority, because investment in education will not only improve the quality of life of individuals but also make a significant contribution to local economic growth. By increasing the level of

education of the community, we can create a more skilled workforce, increase competitiveness, and encourage innovation that will bring long-term benefits to coastal communities.

3.3 Discussion

In this study, we analyze the influence of health and education on economic growth in coastal areas. The results obtained show that these two variables have a significant impact, not only on individuals but also on the community as a whole. This discussion will explore each aspect, link the research results to the broader context, and provide relevant policy recommendations.

a. The Impact of Health on Economic Growth

Public health plays an important role in increasing productivity and quality of life. With a coefficient of 0.45, the analysis shows that good health contributes to better economic growth. Healthy workers have the ability to work more efficiently, which can increase work output. In sectors such as fishing and agriculture that are common in coastal areas, physical health is very important because these jobs often require physical and mental endurance.

It is important to note that health problems, such as infectious diseases or chronic health disorders, can hinder productivity. For example, a fisherman who suffers from an illness may experience a decrease in his ability to catch fish, which in turn will impact the family's income and the local economy. Therefore, the existence of adequate health facilities and good access to health services is crucial. In many coastal areas, people often have difficulty in getting the necessary care due to inadequate health infrastructure. This shows the need for more attention from the government and related organizations to build and strengthen health facilities.

Good health enables workers to work more efficiently and effectively. In the context of coastal areas, where sectors such as fisheries, agriculture and tourism rely heavily on physical labor, optimal health conditions are especially important. Healthy workers have higher attendance rates and are able to complete their work well. In contrast, people who suffer from serious health problems, such as infectious diseases or chronic health disorders, tend to experience reduced productivity. This can lead to reduced income and losses for the local economy.

b. The Influence of Education on Economic Growth

In addition to health, education also has a significant influence on economic growth. The results of the analysis show that education has a positive impact with a coefficient of 0.38. Higher education provides individuals with the skills and knowledge needed to participate productively in the economy. In coastal areas, where access to employment opportunities is often limited, good education is key to improving living standards. Educated communities tend to be better able to adapt to economic and technological changes. They are more likely to engage in more productive and innovative work. For example, fishermen who receive training in sustainable fishing techniques not only increase their catch but also help preserve marine resources. Education also supports entrepreneurship, where educated individuals are more likely to start new businesses, create jobs, and contribute to the local economy.

However, challenges in education in coastal areas are often related to accessibility and quality of education. Many children in remote areas are forced to stop their education due to limited educational facilities, costs, and distance to school. This educational gap can create a cycle of poverty that is difficult to break, where lack of access to good education hinders their ability to compete in the future job market. Therefore, greater attention must be paid to improving access to education, including by building schools closer to communities and providing scholarship programs for underprivileged children.

c. Synergy between Health and Education

The interaction between health and education is also very important in the context of economic growth. They influence each other and create a synergistic effect that can strengthen the positive impact on the economy. Healthy individuals tend to have better learning abilities, which can lead to higher academic achievement. Conversely, good education raises awareness of the importance of maintaining

health, encouraging individuals to adopt a healthy lifestyle. For example, health education provided in schools can help children understand the importance of a balanced diet and exercise, which has a positive impact on their health in adulthood. Thus, there is a strong reciprocal relationship between health and education, creating a more conducive environment for economic growth.

Based on these findings, several policy recommendations can be made to enhance the positive impact of health and education on economic growth. First, the government needs to improve health and education infrastructure by building adequate facilities in remote areas. Second, training and outreach programs on the importance of health and education should be implemented to increase public awareness. Third, building partnerships with non-governmental organizations and the private sector can help provide better services in coastal areas. Fourth, public awareness campaigns need to be conducted to educate individuals about the importance of health and education. Finally, policies that integrate the health and education sectors should be formulated to create a comprehensive approach to improving the quality of life of the community.

Overall, this study shows that health and education are two important pillars in supporting economic growth in coastal areas. Efforts to improve access and quality of health and education services can have a significant impact on productivity and community welfare. Thus, the government and other stakeholders need to take concrete steps to improve both aspects simultaneously, in order to realize sustainable economic growth and improve the quality of life of the community.

d. Social and Economic Implications of Health and Education

When health and education are viewed as two sides of the same coin, the social and economic implications that emerge are significant. In the context of coastal areas, where many communities depend on natural resources for their daily lives, the quality of health and education can directly impact environmental sustainability. Communities that are educated about sustainable resource management practices are more likely to adopt environmentally friendly methods in activities such as fishing and agriculture. This not only benefits them economically, but also ensures the sustainability of the natural resources that are critical to their livelihoods. In other words, good education can be a catalyst for increasing environmental awareness, resulting in actions that benefit not only the individual but also the community as a whole.

In addition, interventions that improve health and education also have the potential to reduce social inequalities. In many coastal areas, gaps in access to education and health services often create greater disparities between different social groups. People who are less educated and in poor health are often trapped in a cycle of poverty. By increasing access to quality education and adequate health services, governments can help break this cycle. Programs such as educational scholarships, skills training, and health education can be effective tools in improving quality of life and encouraging active community participation in the local economy.

e. Sustainable Health and Education Improvement Strategy

To create sustainable change, an integrated strategy between health and education must be implemented. One initial step that can be taken is to involve the community in the planning and implementation of these programs. By involving the community, there will be a better understanding of their specific needs, which in turn will increase the effectiveness of the program. For example, a health education program designed with community input will be more relevant and useful. In addition, a community-based approach can increase the community's sense of ownership and responsibility for their own health and education.

Collaborative programs that integrate health and education services, such as health clinics that function as community education centers, can be an effective model. In this case, communities can gain access to health services while also receiving education about good health practices. In this way, it is hoped that a mutually supportive pattern between health and education will be created, resulting in healthier and more educated communities. This strategy will not only strengthen the local economy but also create more resilient communities that are able to adapt to the challenges they face.

4. Conclusion

Health and education have a positive and significant impact on economic growth in coastal areas. Improved public health contributes to increased productivity, while better education improves individual skills and competitiveness. Despite the great potential, challenges in access to and quality of health and education services remain major barriers. Limited infrastructure and resources prevent communities from accessing the services they need. To promote sustainable economic growth, interventions are needed that focus on improving health and education infrastructure, outreach, and collaboration between government, NGOs, and the private sector. An integrated approach will create synergies that benefit coastal communities.

References

- Amraeni, Y., & Nirwan, M. (2021). *Sosial Budaya Kesehatan Dan Lingkungan Masyarakat Pesisir Dan Tambang*. Penerbit NEM.
- Besar, O. P. G. (n.d.). STRATEGI RECURVE HUMAN CAPITAL INDONESIA: TANTANGAN DAN INTEGRASI ARTIFICIAL INTELLIGENCE DALAM KONTEKS DAYA SAING GLOBAL.
- Fahmi, A. J. (2021). Isu Strategis Dalam Mengatasi Kemiskinan di Kabupaten Serang. *DESANTA (Indonesian of Interdisciplinary Journal)*, 1(2), 78–93.
- Fernanda, A., M Fauzi Yazid, S., & Silitonga, D. T. S. (2023). Korupsi Dan Pembangunan Berkelanjutan: Evaluasi Terhadap Dampak Korupsi Terhadap Pembangunan Ekonomi, Sosial, Dan Lingkungan. *Gudang Jurnal Multidisiplin Ilmu*, 1(5), 77–82.
- Gwijangge, L., Kawung, G. M. V, & Siwu, H. (2018). Pengaruh investasi dan tenaga kerja terhadap pertumbuhan ekonomi provinsi papua. *Jurnal Berkala Ilmiah Efisiensi*, 18(6).
- Hartati, Y. S. (2021). Analisis pertumbuhan ekonomi inklusif di Indonesia. *Jurnal Ekonomi Dan Bisnis*, 12(1), 79–92.
- Jacobus, E. H., Kindangen, P., & Walewangko, E. N. (2021). Analisis faktor-faktor yang mempengaruhi kemiskinan rumah tangga di Sulawesi Utara. *Jurnal Pembangunan Ekonomi Dan Keuangan Daerah*, 19(3), 86–103.
- Kusumawati, I., Lestari, N. C., Sihombing, C., Purnawanti, F., Soemarsono, D. W. P., Kamadi, L., ... Hanafi, S. (2023). *Pengantar Pendidikan*. CV Rey Media Grafika.
- Lestari, D. A. I. (2022). The right to education as a basic right in the context of law and Pancasila. *Indonesian Journal of Pancasila and Global Constitutionalism*, 1(2), 285–306.
- Mariana, K. (2023). Pemberdayaan masyarakat pesisir pantai melalui pendekatan ICZM (Integrated Coastal Zone Management). *Prosiding*.
- Mulia, R. A., & Saputra, N. (2020). Analisis faktor-faktor yang mempengaruhi kesejahteraan masyarakat Kota Padang. *Jurnal El-Riyasah*, 11(1), 67–83.
- Muslich, M. (2022). Pendidikan karakter: menjawab tantangan krisis multidimensional. Bumi Aksara.
- Ngatikoh, S., & Faqih, A. (2020). Kebijakan ekspor impor: strategi meningkatkan pertumbuhan ekonomi di Indonesia. *LABATILA: Jurnal Ilmu Ekonomi Islam*, 4(02), 167–190.
- Nurliana, G. F., Mufidah, A. S., Swadasi, H., Rifqoh, F. M., Athoillah, M. I., Rahmayani, I., ... Purwono, S. (2023). Sosialisasi Pencegahan Stunting Dan Gizi Buruk Dengan Inovasi Makanan Sesuai Dengan Perekonomian Di Desa Sidoagung, Kecamatan Sruweng, Kabupaten Kebumen. *Kampelmas*, 2(2), 1393–1407.
- Pratama, A. J., Oktaviani, M., Ridwan, M. R. N., & Shopiana, N. (2023). Peran Wawasan Nusantara Dalam Pemanfaatan Sumber Daya Alam Dan Pengembangan Ekonomi. *Advances In Social Humanities Research*, 1(5), 566–572.
- Pratama, H. (2023). Pendidikan yang Mengubah Nasib.
- Putra, D. Y. (2011). Peran Sektor Perikanan dalam Perekonomian dan Penyerapan Tenaga Kerja di Indonesia: Analisis Input-Output. *Universitas Andalas*, 22–24.
- Rahim, A., Hastuti, D. R. D., & Malik, A. (2024). *Pembangunan Ekonomi Biru di Indonesia*. Penerbit NEM.
- Rina, B., Abdulhak, I., & Shantini, Y. (2020). Jalinan Kemitraan Program Posyandu dalam Upaya Pemberdayaan Masyarakat di Bidang Kesehatan. *Diklus: Jurnal Pendidikan Luar Sekolah*, 4(2), 112–123.
- Santa, S. F. (2020). Perlunya Perhatian Khusus Untuk Kesehatan Masyarakat Di Pulau Terpencil. *Program Studi Teknik Sistem Perkapalan, Fakultas Teknik, Universitas Hasanuddin*, 1–10.
- Sinaga, A. V. (2023). Peranan teknologi dalam pembelajaran untuk membentuk karakter dan skill peserta didik abad 21. *Journal on Education*, 6(1), 2836–2846.
- Sitohang, A., & Sinabutar, R. (2020). Analisis kebijakan isentif pajak di tengah wabah Covid-19 di Indonesia. *Jurnal Ekonomis*, 13(3).

- Sulaiman, E. S. (2021). *Manajemen kesehatan: Teori dan praktik di puskesmas*. Ugm Press.
- Sulaiman, E. S. (2022). *Pendidikan dan Promosi Kesehatan: Teori dan Implementasi di Indonesia*. UGM PRESS.
- Sunarto, A. (2020). Pengembangan Sumber Daya Manusia dengan Berbasis Inovasi Untuk Menghadapi Revolusi Industri 4.0. *Jurnal Ilmiah Manajemen, Ekonomi, & Akuntansi (MEA)*, 4(2), 397–407.