



Education and Human Development Index in Indonesia: A Systematic Literature Review

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Abstract

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This study aims to analyze the role of education in improving the Human Development Index in Indonesia using a Systematic Literature Review method across several scholarly articles published within the last five years. The findings reveal that education contributes most significantly to Human Development Index improvement through indicators such as expected years of schooling and mean years of schooling, which reflect the long-term capacity of human capital development. However, regional disparities, inadequate infrastructure, and policy implementation challenges remain major obstacles that hinder equal educational progress. Furthermore, government expenditure on education has shown limited effectiveness due to weak monitoring, misallocation of funds, and inconsistent program evaluation. The review also highlights that socioeconomic conditions, employment opportunities, and community awareness toward the importance of education strongly influence human development outcomes. Therefore, improving Human Development Index requires inclusive and adaptive education policies, equitable resource distribution, and enhanced teacher quality. This study provides essential insights for policymakers to design sustainable, evidence-based, and equitable educational development strategies aimed at accelerating human development across Indonesia.



1. Introduction

Education is one of the main pillars in human development because it plays a direct role in improving the quality of Human Resources (HR) and community productivity. In the context of national development, the Human Development Index (HDI) is used as a measuring tool to assess a country's success in achieving community welfare which includes three main dimensions: health, education, and decent living standards (Hasan, 2021). According to the United Nations Development Programme (UNDP), the education dimension in HDI is measured through two indicators, namely average length of school and expected length of schooling, which reflects a country's ability to create a knowledgeable and competitive society (Zahroh & Pontoh, 2021).

Education not only enhances the cognitive abilities of individuals, but also becomes the foundation of social and economic development. Various studies show that improving access and quality of education has a significant impact on labor productivity, poverty reduction, and improved social welfare (Rahma et al., 2019). In addition, a high level of education encourages innovation, strengthens social participation, and accelerates regional economic growth (Indrawati & Kuncoro, 2021). Therefore, the education sector has an important role in achieving sustainable and equitable human development throughout Indonesia.

However, empirical conditions show that there is still a gap in the achievement of HDI between regions in Indonesia. Based on data from the Central Statistics Agency (*Badan Pusat Statistik*/BPS), areas with a strong economic base such as provinces J, D, and S have an average HDI above 75, while other regions in the

eastern region are still lagging behind with numbers below 70. This inequality is largely caused by the low average length of school and the high dropout rate, especially in rural areas (Imaningsih et al., 2020). This shows that equal access to education and teaching quality have not been fully realized despite many intervention programs from the government, such as School Operational Assistance (*Bantuan Operasional Sekolah/BOS*), Smart Indonesia Card (*Kartu Indonesia Pintar/KIP*), and package chase programs (Iryani & Ramdani, 2019). This education inequality also has a direct impact on the low competitiveness and productivity of the region. According to Leiwakabessy and Amaluddin (2020), areas with low HDI tend to experience limitations in terms of access to educational infrastructure, the quality of educators, and the effectiveness of education budget distribution.

On the other hand, Widodo et al., (2020) emphasized that government spending on education does have a positive effect on HDI, but often the effect is insignificant due to the lack of optimal policy implementation at the regional level. In addition to structural factors, social and economic factors also play an important role. The family's economic limitations cause most children in remote areas to be unable to continue their education to a higher level, while low public awareness of the importance of education worsens the situation (Amin et al., 2019). These findings are in line with the research of Siburian (2020) which shows that income and education have a strong positive correlation with HDI, where improved education is able to reduce economic inequality and strengthen inclusive growth.

In the local context, a study by Iryani and Ramdani (2019) shows that in region T, the low education index is caused by three main factors: internal family

problems such as low motivation and economic conditions, inequality of educational facilities between urban and rural areas, and the effectiveness of government programs is not optimal. Therefore, improving HDI requires a multidimensional approach that focuses not only on quantitative aspects such as the number of schools or budget, but also on qualitative aspects such as teaching quality, teacher professionalism, and community participation. Thus, this study aims to analyze the relationship between education and HDI in Indonesia and identify the factors causing the low education index in several areas with low HDI. This research is expected to provide strategic policy recommendations in improving the quality of education and accelerating the equitable distribution of human development at the national and regional levels.

2. Methods

This study uses the Systematic Literature Review (SLR) method to analyze the relationship between education and the Human Development Index (HDI) in Indonesia. This approach was chosen because it was able to provide a comprehensive synthesis of the results of previous relevant research in the last five years. The SLR method is carried out systematically through four main stages: literature identification, selection and screening, data extraction, and thematic analysis. The identification stage was carried out by searching scientific articles from Google Scholar, Elsevier, and ResearchGate databases using keywords such as education, human development index, and Indonesia. The inclusion criteria used include: research published between the last five years, focusing on the influence of

education on HDI or human resource quality, empirical studies with national or regional data, and using English or Indonesian. From the selection process, several articles that met the criteria were obtained, including research by Iryani and Ramdani (2019), Rahma et al. (2019) and Zahroh and Pontoh (2021).

The second stage is the literature selection, where articles are screened based on their thematic relevance and methodological quality. Only studies using relevant quantitative and qualitative approaches were included, while opinion and non-peer-reviewed articles were excluded. At the data extraction stage, each article was analyzed to identify key variables such as education indicators (average length of schooling, school participation rate, and education spending), economic variables (per capita income, poverty), and social variables (regional inequality, access to educational infrastructure). All data is then encoded and classified in a thematic matrix to find patterns and correlations between factors. The final stage is thematic analysis and interpretation of results. The researchers grouped the findings into several major themes, namely: (1) the contribution of education to HDI, (2) regional disparities and access to education, and (3) the effectiveness of government policies. This SLR approach allows researchers to present evidence-based conclusions about how education plays a role in improving HDI in Indonesia, while highlighting factors that hinder progress in several regions.

3. Results

Education is the main factor in increasing the Human Development Index (HDI) in Indonesia because it is one of the most dynamic dimensions in influencing

the quality of life of the community. Based on the concept of the Human Development Report by UNDP, HDI is formed from three dimensions, namely health, education, and decent living standards. Of the three, education has the most flexible contribution to change, as it is able to shape individual skills, productivity, and competitiveness in the labor market (Zahroh & Pontoh, 2021). In the Indonesian context, two education indicators, namely the Average School Length (*Harapan Lama Sekolah*/HLS) and the Average School Length (*Rata-Rata Lama Sekolah*/RLS), are important benchmarks to assess the progress of human development. Arofah and Rohimah (2019) showed that a one-year increase in average school length has the potential to increase HDI by 0.35 points, which means that education directly contributes to improving people's welfare.

Education functions as a form of social investment that generates human capital to boost labor productivity. Indrawati and Kuncoro (2021) emphasized that education not only improves individual competence, but also strengthens regional economic structure through increasing innovation capacity and job skills. The development of quality education enables people to participate in productive economic activities, reduce poverty, and increase global competitiveness. However, the contribution of education to HDI in Indonesia has not been evenly distributed throughout the region. Data from the Central Statistics Agency shows that provinces in the western region have an HDI above 75, while the eastern region is still below 70. This inequality reflects significant differences in access, quality, and effectiveness of education between regions.

The gap is influenced by various factors, ranging from geography, infrastructure, to regional fiscal capabilities. Imaningsih et al., (2020) stated that Indonesia's geographical condition, which consists of thousands of islands, results in an uneven distribution of educational facilities and teaching staff. Schools in remote areas often lack qualified educators and adequate learning facilities, resulting in low secondary school participation. A similar study by Amin et al. (2019) found that the average length of schooling in the eastern region of Indonesia is still under 8 years, far behind the western region which reaches 9.5 years. This inequality causes significant differences in people's productivity and income in various regions.

The difference in fiscal capacity between regions also deepens education inequality. Leiwakabessy and Amaluddin (2020) explained that areas with high Regional Original Income (*Pendapatan Asli Daerah*/PAD) can provide greater financial support for schools, while areas with low PAD depend on central government transfer funds. As a result, the quality of education in low-income areas is left behind due to limited facilities, teaching staff, and access to learning technology. This has direct implications for the achievement of national HDI which still shows significant gaps between provinces. Hasan (2021) added that the low quality of education in disadvantaged areas is strongly correlated with high poverty rates and low public health degrees, two other factors that contribute to shaping HDI.

The Government of Indonesia has launched various policies to address education inequality, such as School Operational Assistance (*Bantuan Operasional Sekolah*/ BOS), Smart Indonesia Card (*Kartu Indonesia Pintar*/ KIP), and Smart

Indonesia Program (*Program Indonesia Pintar*/ PIP). These programs are aimed at increasing educational participation for low-income groups. However, the effectiveness of its implementation is still the main issue in various regions. Iryani and Ramdani (2019) found that in several districts, the management of BOS and KIP funds has not been running optimally due to weak supervision and lack of transparency in the distribution of funds. Some schools have not made the most of the assistance to improve the quality of learning, while people in rural areas still do not understand the mechanism for distributing the assistance.

Widodo et al. (2020) emphasized that government spending in the education sector does have a positive effect on HDI, but the effect is not statistically significant. This shows that the increase in the education budget is not always directly proportional to the improvement in the quality of education. The main problem lies in the effectiveness of policy allocation and implementation on the ground. Citrawan and Widana (2018) added that the effectiveness of education programs will increase if integrated with cross-sectoral policies, especially in the fields of health, nutrition, and family economics. When children grow up in a healthy environment and families have stable economic conditions, school participation rates and learning outcomes increase significantly.

In addition to structural factors, the social and economic dimensions also have a strong influence on education and HDI. Siburian (2020) found that increasing education levels can reduce poverty rates and improve community welfare. A good education allows individuals to obtain jobs with higher incomes, thereby improving their consumption ability and standard of living. However, Haseeb et al. (2020)

highlights that economic inequality can reduce the positive impact of education on HDI. In areas with high poverty rates, education does not always guarantee welfare due to limited employment opportunities and low local economic productivity. Therefore, education policies must be integrated with regional economic strategies in order to be able to create productive jobs that support human development.

The factor of public awareness of the importance of education also determines the success of human development. Miranti (2021) through an analysis of HDI clusters in Indonesia found that provinces with higher education awareness levels tend to have better HDI than other regions. Public awareness in supporting their children's education is an important element that strengthens the effectiveness of government education policies. On the other hand, areas with low literacy rates and social values that do not support education still face significant barriers to school participation.

The quality of educators and the availability of school infrastructure are other factors that are very decisive. Imaningsih et al. (2020) stated that although the number of teachers in Indonesia is quite large, the distribution is still uneven. Urban areas have teachers with better academic qualifications than rural areas. This inequality has a direct impact on the quality of learning and student achievements. In addition, shows that around 30% of elementary schools in Indonesia still need facility improvements. The lack of learning spaces, laboratories, and digital facilities leads to low learning effectiveness, especially in remote areas. Leiwakabessy and Amaluddin (2020) emphasized that investment in educational infrastructure not only

improves physical facilities, but also increases people's motivation to participate in formal education.

Education in Indonesia has a dual function in the context of human development, namely as a goal and a means. As a goal, education increases human capacity to live a decent life and actively participate in development. As a means, education is an instrument to strengthen the health and economic dimensions in HDI (Rahma et al., 2019). However, the effectiveness of education as a driver of human development is highly dependent on cross-sectoral policy synergy. Hasan (2021) emphasized that education policies that stand alone without integration with economic and social policies tend to produce short-term impacts. Therefore, coordination between agencies is needed in the implementation of policies to ensure sustainable results. Furthermore, Haseeb et al. (2020) emphasizes the importance of place-based policies that consider the social, economic, and geographical characteristics of each region. A uniform policy approach across Indonesia is ineffective due to significant differences in local contexts. Local governments must have the flexibility to adjust education policies to the needs of their communities. This strategy is important to strengthen the equitable distribution of human development and accelerate the increase in national HDI.

Based on the results of the analysis, it is shown that the increase in HDI in Indonesia is highly dependent on the success of the national education system in overcoming access inequality, improving the quality of teachers, and strengthening policy governance. The government needs to balance the focus between increasing the quantity and quality of education. Equitable access to education in disadvantaged

areas, teacher training, digitalization of learning, and cross-sector collaboration are strategic steps that can accelerate the increase in HDI. By strengthening the dimension of education as the core of human development, Indonesia can accelerate the achievement of the Sustainable Development Goals (SDGs) and create an inclusive, competitive, and prosperous society throughout its region.

4. Conclusion

Education has proven to have a central role in increasing the Human Development Index (HDI) in Indonesia. Based on the results of the literature review, the education dimension, especially the indicators of average school length and school length expectation, is the main determinant of HDI variation between regions. However, improving the quality of education is still hampered by regional inequality, limited infrastructure, and the effectiveness of education policy implementation that is not optimal. Although the government has launched various programs such as BOS, KIP, and *Kejar Paket*, their implementation is often uneven and not fully on target. In addition to structural factors, socio-economic conditions and public awareness also have a significant effect on educational achievement.

Therefore, efforts to increase HDI are not enough to be carried out through expanding access to education alone, but also through improving the quality of educators, equitable distribution of facilities, and strengthening the family economy. An integrated and sustainable education development strategy is needed, which focuses not only on the quantity but also on the quality of learning. Synergy between the government, the community, and the private sector is the key to accelerating the

increase in HDI and creating an equitable distribution of human development throughout Indonesia.

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