

The Influence of Education, Social, and Healthcare Expenditures on the Human Development Index (HDI) in Bireuen Regency

**Rizki Alda^a, Zulkifli Nasution^b, Satia Negara Lubis^c,
Arga Abdi Rafiud Darajat Lubis^d**

^{a,b,c} Regional and Rural Development Planning, Universitas Sumatera Utara, Indonesia.
^d Directorate of Internationalization and Global Partnerships, Universitas Sumatera Utara, Indonesia.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: XXXX/AMJEL/2024/XXXXX

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here:

Original Research Article

Received: 07/07/2024

Accepted: 30/08/2024

Published: 12/09/2024

ABSTRACT

This study investigates the effects of education, social, and healthcare expenditures on the Human Development Index (HDI) in Bireuen Regency. Using quantitative analysis and regression methods, data from official government sources were analyzed to explore the relationships between these variables. The results indicate that education spending has a significant negative effect on HDI, highlighting the need for better allocation and use of resources within the education sector. Conversely, social expenditure showed no significant positive effect on HDI, pointing to the need for improvements in social programs and policies. In contrast, healthcare spending had a significant positive impact on HDI, underscoring the importance of sufficient healthcare resource allocation. Collectively, these expenditures had a significant positive effect on HDI, emphasizing the necessity of a comprehensive approach to budget allocation. The study recommends optimizing education funding to prioritize quality improvements and enhancing the effectiveness of social spending

⁺⁺ Medan;

*Corresponding author: Email: Rizkialda2023@gmail.com

Cite as: Alda, R., Nasution, Z., Lubis, S. N., & Lubis, A. A. R. D. (2024). The influence of education, social, and healthcare expenditures on the Human Development Index (HDI) in Bireuen Regency. *Asian Multidisciplinary Research Journal of Economy and Learning*, 1(2), 20–25

programs to better meet the needs of the population. Adequate funding for healthcare is essential to improving human development outcomes.

Keywords: *Human Development Index (HDI), Education Expenditure, Social Expenditure, Healthcare Expenditure, Bireuen Regency*

1. Introduction

Development is a multidimensional process that involves the reorganization and reorientation of existing social and economic systems. As noted by Todaro and Smith (2011), development encompasses economic growth, improved living standards, and the overall welfare of the population. One of the key roles of the government in this process is its responsibility for fiscal management, especially when it comes to allocating resources for human resource development. This is particularly important in areas like education and healthcare, which play a central role in fostering human capital (Arga, 2024).

Government expenditures in education, healthcare, and social services are crucial to improving the quality of life for the population. These sectors directly influence the capacity of individuals to contribute to society and achieve higher levels of personal and community well-being. Santoso et al. (2013) highlight that government funding in these areas serves to position humans as both the actors and beneficiaries of development. As such, effective and strategic government spending is essential to human development.

Human development is often measured by the Human Development Index (HDI), which takes into account key indicators such as life expectancy, education, and income. The HDI positions human welfare at the center of development policy, ensuring that progress is not only about economic growth but also about improving people's quality of life. According to Stewart (2010), for a country or region to develop, the government must provide adequate financial resources to human capital through carefully planned budgetary policies.

Public spending in sectors such as education and health is directly linked to improvements in the HDI. Muliza et al. (2017) emphasize that investments in human capital—particularly in education and healthcare—can lead to significant gains in the HDI. This is because better education systems result in a more skilled workforce, while better healthcare systems contribute to a healthier population, both of which are essential for sustainable development.

In Aceh Province, and particularly in Bireuen Regency, government expenditures in the areas of education, healthcare, and social services have fluctuated over time. However, despite these fluctuations, Bireuen Regency has seen a steady increase in its HDI from 2015 to 2019. Specifically, the HDI in the region rose from 69.77 in 2015 to 72.27 in 2019. This growth indicates that, while challenges remain, government efforts in these sectors are yielding some positive outcomes.

However, the relationship between government spending and human development is complex and requires further investigation. Understanding how expenditures in education, healthcare, and social services contribute to the HDI can help policymakers make more informed decisions regarding resource allocation. Analyzing this relationship in the context of Bireuen Regency, where government spending and HDI have shown notable changes, offers valuable insights into the impact of public expenditures on human development.

Development, as defined by Sirojuzilam and Mahalli (2010), involves the expansion, improvement, and enhancement of systems and infrastructure within a region. In this context, a region is seen as a geographic unit made up of interconnected areas, each contributing to the overall development process. According to Law No. 26 of 2007 on Spatial Planning, a region represents a specific geographic area whose boundaries are determined based on administrative and functional aspects.

Bireuen Regency, located within Aceh Province, serves as the focus of this study. The regency is an important area for examining the impact of government expenditures on human development because it has experienced fluctuations in both spending and HDI

over the years. By analyzing these variables, we can better understand the factors that contribute to human development and identify areas where improvements can be made.

This study aims to explore the effects of government expenditures on education, healthcare, and social services on the HDI in Bireuen Regency. By focusing on this specific region, we hope to provide a clearer picture of how public spending influences human development at the local level. Understanding these relationships is crucial for formulating policies that can more effectively enhance the well-being of the population.

In conclusion, the role of government spending in human development is essential, particularly in the sectors of education, healthcare, and social services. As seen in Bireuen Regency, these expenditures can have a significant impact on the HDI, though the effects vary depending on how resources are allocated and utilized. This study will investigate these relationships in greater detail to offer recommendations for optimizing public spending to improve human development outcomes.

2. Method

This research was conducted in Bireuen Regency, utilizing data from the Regional Revenue and Expenditure Budget, which was obtained from the Central Bureau of Statistics (BPS) of Bireuen Regency. The study relied on secondary data, which included various materials and reports related to the research topic. These documents, sourced from both published and unpublished archives, provided historical records necessary for the analysis.

The data gathered focused on education expenditure, social expenditure, healthcare expenditure, and the Human Development Index (HDI) in Bireuen Regency from 1995 to 2020. This data was sourced from the BPS library of Bireuen Regency.

For data analysis, this study employed a multiple linear regression model to investigate the impact of different types of expenditures on the HDI. The regression formula used is as follows:

$$Y = \alpha + b_1 EP + b_2 SE + b_3 HE + e$$

Where:

- Y represents the Human Development Index (HDI),
- EP denotes education expenditure (in millions of Indonesian Rupiah),
- SE refers to social expenditure (in millions of Indonesian Rupiah),
- HE stands for healthcare expenditure (in millions of Indonesian Rupiah),
- α is the constant, and
- b_1, b_2, b_3 are the regression coefficients for each respective variable.

This approach allows for a comprehensive analysis of the relationship between government spending in key sectors and the resulting changes in the HDI in Bireuen Regency.

3. Result and Discussion

During the 10-year observation period, data was collected on education expenditure, social expenditure, healthcare expenditure, and the Human Development Index (HDI). The descriptive statistics, which include the number of data points, mean, standard deviation, minimum, and maximum values, are summarized in **Table 1**.

Table 1. Descriptive Statistics for Education Expenditure, Social Expenditure, Healthcare Expenditure (in Billion Indonesian Rupiah), and HDI

Variable	N	Mean	Median	Std. Deviation	Minimum	Maximum
Education Expenditure	10	387.5310	430.8750	143.03292	41.68	542.41
Social Expenditure	10	17.4380	14.2750	10.88334	4.19	42.21
Healthcare Expenditure	10	189.8250	187.9350	121.87367	47.60	346.03
Human Development Index	10	69.2690	69.2400	1.98199	66.42	72.27

Source: Processed data from BPS Bireuen Regency, 2021

The analysis of education expenditure in Bireuen Regency from 2010 to 2019 shows that the average spending on education was IDR 387.53 billion, with a minimum of IDR 41.68 billion and a maximum of IDR 542.41 billion, resulting in a range of IDR 500.73 billion. This significant variation in education expenditure suggests that fluctuations in the allocation of funds may have contributed to slow progress in the Human Development Index (HDI).

Similarly, social expenditure during the same period had an average of IDR 17.44 billion, with a range between IDR 4.19 billion and IDR 42.21 billion. This large difference in social spending highlights the inconsistency in funding, which could also be a factor in the sluggish growth of the HDI in Bireuen Regency.

Healthcare expenditure, which averaged IDR 189.83 billion during the observed period, also exhibited a wide range, with a minimum of IDR 47.60 billion and a maximum of IDR 346.03 billion. The gap of IDR 298.43 billion between the highest and lowest expenditures indicates potential variations in the availability and quality of healthcare services, which could have influenced human development outcomes in the region.

As for the HDI, the values observed from 2010 to 2019 ranged from 66.42 to 72.27, with an average of 69.27. Although the HDI increased over the years, the relatively slow growth suggests that the improvements in human development were not as rapid as expected, possibly due to uneven resource distribution across sectors.

3.1 Regression Analysis Results

The regression analysis provided the following equation:

$$Y = 17.052 - 0.007X_1 + 0.014X_2 + 0.018X_3$$

Where:

- Y is the HDI,
- X₁ is education expenditure,
- X₂ is social expenditure, and
- X₃ is healthcare expenditure.

The results show that education expenditure has a significant negative effect on the HDI, with a coefficient of -0.007 and a significance level of 0.000. This suggests that, while funds are allocated for education, inefficiencies or misallocations could be hindering improvements in human development. In contrast, healthcare expenditure showed a significant positive effect on the HDI, with a coefficient of 0.018 and a significance of 0.000, underscoring the critical role of healthcare in boosting human development outcomes. Social expenditure, however, did not have a significant effect on the HDI.

Discussion

The findings reveal that education expenditure in Bireuen Regency has had a negative effect on the HDI, consistent with previous studies by Habeahan (2015) and

Nikmah (2020). This negative relationship can be attributed to the suboptimal implementation of educational programs, including the focus on infrastructure over quality improvements, as well as challenges in scaling education services for a growing population. Furthermore, the government's emphasis on infrastructure development, rather than teacher and student training, may be limiting the effectiveness of education spending.

The insignificant effect of social expenditure on the HDI aligns with other studies, while social expenditures are expected to enhance well-being, the effect on HDI can sometimes be less significant than anticipated. This aligns with findings in studies on social public spending and human development, including studies in both European contexts and countries like China. For example, in some cases, even with increased social spending, issues such as income inequality, inefficiency in expenditure, and regional disparities can limit the effect on HDI improvement. These factors can lead to social spending having an insignificant or limited impact on key indicators of human development (Song, 2022).

Healthcare expenditure, on the other hand, had a significant positive impact on the HDI. This finding aligns with previous research by Rukiah and Siregar (2019), which demonstrated that healthcare spending plays a key role in improving human development. Adequate funding for healthcare services is essential for enhancing life expectancy and overall well-being, both of which are crucial components of the HDI.

Conclusion and Recommendations

The study concludes that education expenditure has had a negative impact on the HDI, while healthcare expenditure positively influences human development. Social expenditure showed no significant effect. To improve the HDI, it is recommended that the Bireuen Regency government prioritize quality over quantity in education spending by focusing on human resource development and educational outcomes. Additionally, healthcare funding should be maintained or increased, given its proven positive impact on human development.

REFERENCES

- Habeahan, T. M. (2015). *Study on the availability of automotive engineering workshop facilities at SMK Negeri 8 Bandung based on the national education infrastructure standards to meet competency test standards* (S1 thesis, Universitas Pendidikan Indonesia). Universitas Pendidikan Indonesia Repository.
- Lubis, A. A. R. D., Agung, V. R., & Lubis, S. N. (2024). Evaluation of community empowerment initiatives in dengue hemorrhagic fever control and prevention in Pekanbaru City: English. *Asian Multidisciplinary Research Journal of Economy and Learning*, 1(1).
- Muliza, T., et al. (2017). The effect of education spending, health spending, and GRDP on the Human Development Index in Aceh Province. *Jurnal Perspektif Ekonomi Darussalam*, 3(1), 51-69.
- Rukiah, R., Nuruddin, A., & Siregar, S. (2019). Islamic Human Development Index in Indonesia (A Maqhasid Syariah Approach). *Istinbáth: Jurnal Hukum dan Ekonomi Islam*, 18(2).
- Santoso, S., Yulianto, E., & Susanty, A. (2013). *Policy model of regional financial management and community empowerment in the perspective of regional autonomy*. Deepublish.
- Sirojuzilam, M., & Mahalli, M. (2010). *Regional development and planning*. Syiah Kuala University Press.
- Song, Z., & Tong, P. (2022). The impact of social security expenditure on human common development: Evidence from China's provincial panel data. *Sustainability*, 14(17), 10946. <https://doi.org/10.3390/su141710946>

Stewart, F. (2010). Human development and economic growth. *World Development*, 38(10), 1357-1368.

Todaro, M. P., & Smith, S. C. (2011). *Economic development* (11th ed.). Jakarta: Erlangga.