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Critical analysis of the human development index in Mesuji Regency, 2010–2022

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Abstract
Purpose: This study evaluates the performance of the Human Development Index (HDI) improvement program in the Mesuji Regency and identifies factors that influence the dynamics of HDI achievement. Mesuji is a peripheral region that experiences a significant socio-economic lag within Lampung Province, Indonesia.
Research Methodology: This study employs a mixed method with an explanatory sequential design, combining quantitative analysis of HDI data from the BPS with qualitative interpretation of contextual and policy factors affecting HDI outcomes.
Results: From 2010 to 2022, Mesuji's HDI steadily increased, driven by improvements in Life Expectancy, Education Index, and Gross National Income per Capita. Key drivers include improved healthcare services, educational expansion, job availability, infrastructure development, and pro-poverty policies.
Conclusions: The program aimed at increasing the Human Development Index (HDI) in Mesuji Regency has shown positive results from 2010 to 2022, yet the region's HDI remains classified as "medium" compared to the national average.
Limitations: The analysis was limited to the 2010–2022 period, excluding developments beyond this range.
Contribution: This study contributes to challenges such as regional development disparities, high poverty rates, and unemployment, which still need to be addressed to achieve more equitable and sustainable development.
Novelty: Despite positive growth, Mesuji's HDI remains in the "medium" category, highlighting the need for strategic and sustained efforts in the health, education, and income sectors. Comprehensive interventions supported by inclusive policies are essential to accelerate HDI progress and reduce regional disparities.
Keywords: *Expected Years of Schooling (EYS), Human Development Index (HDI), Life Expectancy (LE), Per Capita Expenditure (PCE)*
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1. Introduction

The Human Development Index (HDI) is an important indicator of the success of a region's development. The HDI includes three main dimensions: health, education, and decent living standards. According to the Central Statistics Agency (BPS), HDI is calculated based on three components: life expectancy, average years of schooling, and per capita expenditure. In Indonesia, the HDI is the main reference for evaluating human development in all provinces and districts/cities (Umiyati, Amril, & Zulfanetti, 2017).

According to the BPS, the HDI is a composite indicator that measures the average achievement of three basic dimensions of human life: health, education, and living standards. HDI is calculated using a combination of health indicators (life expectancy at birth), education (average years of schooling and school life expectancy), and living standards (gross domestic product per capita).

Education and health are the main components that influence HDI in Indonesia. Increasing education and health budgets can significantly increase HDI scores (Mongan, 2019). Access to basic infrastructure such as electricity, clean water, and transportation has a strong positive correlation with increasing HDI (Dira, Utomo, Bangun, Pramularso, & Syarief, 2023). Sulaeman and Andriyanto (2021) found that decentralization policies had varying impacts on HDI in various regions of the country. This study finds that the effectiveness of decentralization policies is highly dependent on the administrative and managerial capacity of local governments.

Several factors can influence HDI in an area, including (1) access to quality health services, (2) community education level, (3) availability of employment opportunities and community income level, (4) basic infrastructure such as roads, clean water, and sanitation, and (5) regional government policies that focus on improving the quality of life of the community. At the factual level, strategic investments in education, health, and technology can break the vicious cycle of poverty and population growth (Bans-Akutey 2025). Many studies have demonstrated that local community development initiatives using an empowerment approach are critical for improving welfare, especially in developing countries (Achiro & Mwesigwa, 2023). In several African countries, the low participation of teenagers in continuing education has resulted in an increase in early marriages and extra-formal relationships, resulting in an increase in the number of pregnant teenagers, for example, in Nigeria (Anayochukwu, 2022).

Analysis of HDI trends in Lampung during the 2010-2022 period shows a consistent increase pattern. Lampung's HDI increased from 62.92 in 2010 to 71.79 in 2022, with an average annual growth rate of 0.61%. Although the trend is positive, Lampung's HDI still lags behind the national average. By 2022, the national HDI will reach 71.89, indicating that Lampung's HDI is below the national average.

Mesuji Regency, which is located in Lampung Province, has recently undergone an HDI classified as "Medium" recently. This shows that there is still room for improvement in various aspects of human development in the Mesuji Regency. The Mesuji Regency is a region in which HDI growth dynamics are interesting to analyze. Based on data from BPS Lampung Province (BPS, 2023), the growth of the Mesuji Regency HDI from 2010 to 2022 shows a positive trend. However, various challenges must be overcome to achieve equitable and sustainable development.

Mesuji Regency was chosen as the research object for increasing the Human Development Index (HDI) based on peripheral area theory. Peripheral region theory refers to the concept that regions located on the outskirts or far from the main economic and political centers often experience backwardness in social and economic development compared to central areas. The reasons underlying the choice of the Mesuji Regency as the focus of this research are as follows:

1. Infrastructure Underdevelopment
   As a peripheral area, the Mesuji Regency often has inadequate infrastructure compared to regions in the center. Limited access to transportation, health facilities, and educational institutions in this region is the main factor hindering community quality of life. Peripheral area theory shows that adequate infrastructure development is an important step toward encouraging economic growth and improving community welfare.
2. Limited Access to Education and Health
   Mesuji Regency, as a peripheral region, often faces challenges with respect to access to education and health services. This is reflected in the fact that this limitation directly affects the low expected years of schooling and life expectancy, which are important components of the HDI. Research in peripheral areas, such as Mesuji, can provide insights into effective strategies to improve access to and quality of these basic services.
3. Economic Inequality

In general, peripheral regions experience greater economic inequality than central regions. The Mesuji Regency faces significant economic challenges, including high levels of poverty and low per capita incomes. The peripheral region theory emphasizes the importance of appropriate economic interventions to reduce inequality and encourage inclusive growth. This research can help develop targeted policies to overcome the economic problems in Mesuji.

4. Geographic Isolation
   The Mesuji Regency often experiences geographic isolation, which limits integration with regional and national markets. The peripheral region theory suggests that such isolation can be a barrier to economic and social development. Research on increasing the HDI in Mesuji can provide a deeper understanding of how to overcome geographic isolation by building better connectivity and infrastructure.
5. Natural Resource Potential
   Although it is a peripheral area, the Mesuji Regency has natural resource potential that can be used for development. However, this potential is often not optimally exploited owing to various limitations. The peripheral area theory emphasizes the importance of effective and sustainable resource management to encourage local development. This study explores effective strategies for using natural resources in Mesuji.

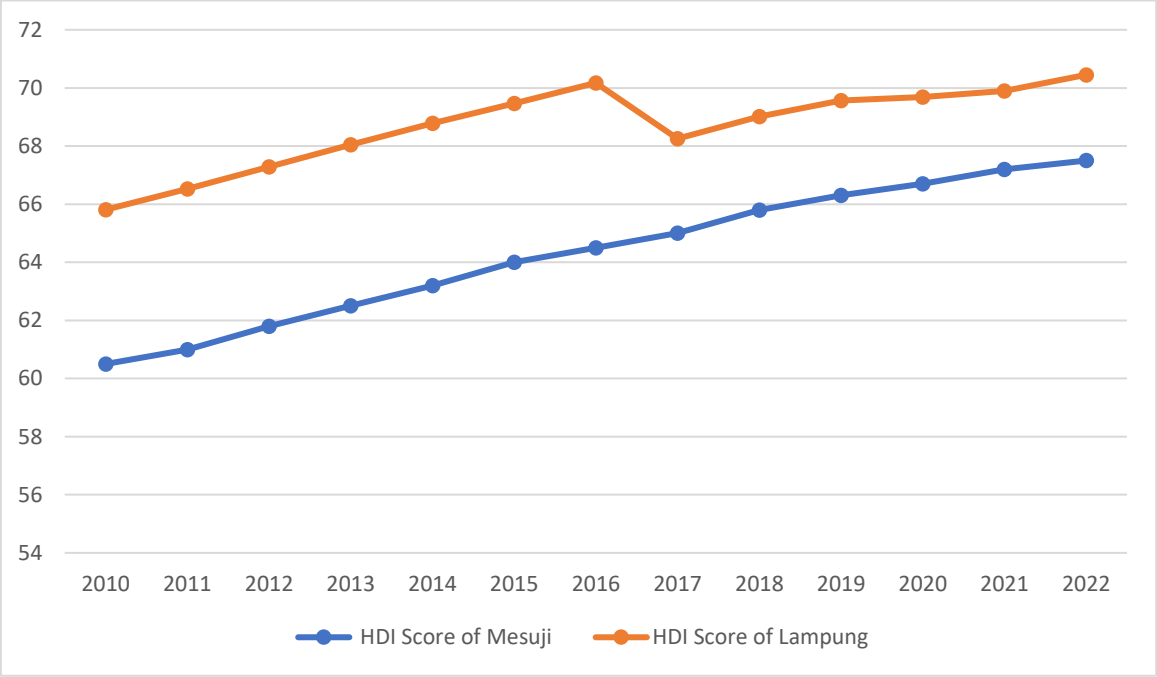

Figure 1. HDI growth graph for Mesuji Regency and Lampung (2010-2022)
Source: BPS Provinsi Lampung, 2023

The growth of the HDI in the Mesuji Regency reflects the regional government's efforts to improve community quality of life. The increase in HDI is greatly influenced by local government policies in the fields of health, education, and the economy (Suhendi & Astuti, 2023). Yanfi (2022) stated that HDI is a comprehensive benchmark for human development, while Maryozi, Isyandi, and Aulia (2022) emphasized the importance of health and education aspects in increasing HDI. Despite this increase, Mesuji Regency's HDI is still classified as "medium" compared to the national HDI, which will reach 71.89 in 2022.

In addition to the overall HDI trend, it is important to analyze the trend of each HDI component: AHH, HLS, and PPK. The following is a trend analysis of HDI components in the Mesuji Regency:

1. Life Expectancy at Birth
   The AHH in Mesuji Regency increased from 67.15 years in 2010 to 70.73 years in 2022. This increase shows that the average life expectancy of people in Mesuji Regency is higher than that of non-competitive households.

2. Education Index
   HLS in Mesuji Regency increased from 10.78 years in 2010 to 12.74 years in 2022. This increase shows that the average length of time each person is expected to take to receive formal education in Mesuji Regency is increasing.
3. Gross National Income (GNI) per Capita
   The PPK in the Mesuji Regency has increased from IDR 6,836,000 in 2010 to IDR 10,336,000 in 2022. This increase shows that the average expenditure per person per year in the Mesuji Regency is increasing.

Based on data analysis and previous research, several factors that can influence the HDI of the Mesuji Regency include the following:

1. Access to quality healthcare services
   The Mesuji Regency still has shortcomings in terms of access to quality healthcare services, especially in rural areas. This can be seen in the high infant and toddler mortality rates in the Mesuji Regency.
2. Community education level
   The level of public education in the Mesuji Regency is still lower than that in other Indonesian regions. This can be seen from the high illiteracy rate and low education participation rate in the Mesuji Regency.
3. Availability of employment opportunities and community income levels

The availability of job opportunities in the Mesuji Regency remains limited, and the community's income level is relatively low. This can be seen in the still high unemployment and poverty rates in the Mesuji Regency.

1. Basic infrastructure
   The basic infrastructure in the Mesuji Regency is still inadequate, especially in rural areas. This can be seen in the poor condition of roads, clean water, and sanitation in the Mesuji Regency.
2. Regional government policies
   Mesuji Regency's regional government policy has not focused on improving community quality of life. This can be seen from the minimal budget allocated to the health, education, and infrastructure sectors in the Mesuji Regency.

Mesuji Regency's HDI has experienced a consistent increase from 2010 to 2022, but it is still classified as "medium" compared to the national HDI. The increase in HDI was driven by increases in AHH, HLS, and PPK levels. One of the main challenges is the development gap between regions within the district. Therefore, this research aims to analyze the growth of HDI in the Mesuji Regency and identify the factors that influence the achievement of HDI in this region. Thus, this research can provide appropriate policy recommendations to accelerate human development in the Mesuji Regency.

2. Literature review

2.1. Human Development Theory

The United National Development Program (UNDP) defines human development as a process for determining and expanding human choices. The choices referred to meeting human needs through a development process from various aspects, such as the construction of relevant facilities and infrastructure. This finding agrees with new thinking about development that places humans as the focus or center of development. The goal of development is to create and adapt to the environment to achieve human prosperity. In the development process, the quality and quantity of people, which are closely related to human development, are needed. Human development is expected to improve the quality of work and welfare of the people of a country (Bangun, Calista, Br Ginting, & Simanjuntak, 2024).

Musriyati (2022) stated that the UNDP coined the human development theory to improve the previous concept of human resource analysis, which was based on gross domestic product or average per capita income. According to the UNDP, average income cannot describe the condition of human resources in a region in detail because the gap tends to be high between rich and poor people. The average figure

indicates that poor people will be recorded as having more welfare. high. Human development was raised to improve the measurement in question. The basic premise of human development is as follows:

1. Residents must focus on development.
2. Development is intended to expand people's choices, not just to increase income. Therefore, the concept of human development must center on the population as a whole, not just on economic aspects.
3. Human development requires not only paying attention to efforts to increase human capabilities, but also efforts to maximize human ability.
4. Human development is supported by four pillars: productivity, equity, sustainability, and empowerment.
5. Human development is the basis for determining development goals and analyzing options for achieving them.

Referring to the definition of human development from the UNDP, Bisai, Kbarek, and Pajeru (2019) wrote that human development as a process of expanding choices for society is carried out through various empowerment efforts that aim to increase basic human abilities to the fullest extent so that they can participate in all areas of development for the benefit of the community. Human development is also an indicator of a country's progress, where a country is declared advanced not only by calculating its gross domestic income but also by including aspects of life expectancy as well as the education and health of its people (Yektiningsih, 2018).

Human development is a developmental paradigm in which humans are the subjects of economic activity. The focus and target of development is to achieve mastery of human resources in order to obtain income and achieve a decent life to influence economic growth. Human development is the ultimate goal of all types of development (Arafat & Rindayati, 2018). Harahap (2022), citing Todaro and Smith, wrote that human resource development means increasing the basic abilities of society, which can increase opportunities to participate in the development process.

Human development is a process and result, namely the process of enhancing human choices while also becoming a goal. Human development implies that people must influence the processes that shape their lives. Human development is the development of society through the development of human capabilities and the active participation of society in processes that influence the formation and improvement of society and its life. Human development involves acquiring additional abilities and enjoying more opportunities to use them. With more capabilities and opportunities, people have more choices, and expanding choices are at the heart of the human development approach. Human development is a process that cannot be separated from human rights and is related to human security. The main goal of this approach is to increase human freedom (Yektiningsih, 2018).

2.2. Human Development Index

Bangun et al. (2024) stated that the HDI defines human welfare as not only limited to gross domestic income (GDP), but also includes a broader meaning. The HDI has been published in the Human Development Report since 1990. HDI is measured by comparing three components: (1) life expectancy, (2) literacy and education, and (3) living standards. The three components were calculated as simple averages to determine life expectancy, education, and standard indices of decent living.

In the Human Development Report, human development is defined as "a process of enlarging people's choices" or a process that expands people's choices or improves aspects of their lives. These important aspects of life can be observed in a long and healthy life, an adequate level of education, and a decent standard of living. The Central Statistics Agency (BPS) of Indonesia defines the Human Development Index as an index assessed based on people's ability to maintain health, obtain higher education, and earn income to meet economic needs for a decent life (Pratiwi & Nurdiawansyah, 2019). Himo, Rotinsulu, and Tolosang (2022) stated that the Human Development Index (HDI) was a breakthrough in evaluating human development.

According to Baeti (2013), the HDI is used to measure the magnitude of the impact of efforts to increase basic human capital capabilities. Human development is a component of development carried out

through community empowerment, with an emphasis on improving human basics. Human development was calculated by measuring the size of education, health, and purchasing power. The higher the number of goals produced, the more development goals that are achieved.

Yuliansyah (2021) writes that as a measure of quality of life, HDI is built using a basic three-dimensional approach, namely, long and healthy life; knowledge; and decent life, which is measured by several indicators, namely: life expectancy at birth (long life and healthy life dimension; years of schooling and average length of schooling (knowledge dimension); and purchasing power (Purchasing Power Parity), which represents the dimension of a decent living standard. Purchasing power can be seen from per capita expenditure as an income approach with developmental achievements for a decent life.

Baihaqi (2024) stated that as a measure of quality of life, HDI is built using a basic three-dimensional approach: long and healthy life, knowledge, and decent standard of living. These dimensions have broad meanings because they are related to many factors. The dimensions of long-term healthy living were measured using indicators of life expectancy at birth. The knowledge dimension was measured using a combination of indicators of expected and average years of schooling. The dimensions of decent living standards are then measured using indicators of people's purchasing power for some basic needs, which are seen from the average real expenditure per capita. This real per capita expenditure represents an income approach representing development achievements that result in an indecent standard of living.

Life expectancy at birth, an indicator for measuring the dimensions of longevity and a healthy life, is an estimated average of the number of years a person can live during their life. The indicators used for the knowledge dimension were average years of schooling and expected years of schooling. The average number of years of schooling reflects the number of years spent by people aged 25 years and over in formal education. The expected length of school is defined as the length of school (in years) that a 7-year-old child is expected to experience in the future. Then, the dimension of decent living standards, which describes the level of welfare enjoyed by the population as a result of increasingly improving economic conditions, is measured by the UNDP using adjusted Gross National Product (GNP) per capita. To calculate decent living standards, the BPS uses the adjusted average real expenditure per capita. The maximum and minimum limits were used to calculate the index for each HDI dimension, as shown in Table 1.

Table 1. Maximum and Minimum Values of HDI Dimensions

Componen Indicator	Unit	Minimum	Maximum
Life Expectancy at Birth	Year	20	85
Expected Years of Schooling	Year	0	18
Average Years of Schooling	Year	0	15
Real Expenditure per Capita per Year adjusted	IDR	1.007.436*	26.572.352**

Source: Sriwahyuni et al. (2025).

3. Methodology

This study uses a mixed-methods approach with an explanatory sequential design that combines the strengths of quantitative and qualitative analyses sequentially. In the initial stage, this study analyzed quantitative data from the Central Statistics Agency (BPS) and the Mesuji Regency Government's work program documents to evaluate the development and achievement of the Human Development Index (HDI) during 2010–2022. This quantitative analysis aims to identify patterns, trends, and significant changes in HDI indicators, such as life expectancy, education index, and per capita income. Furthermore, the quantitative findings were deepened through qualitative analysis to explore the social context, local policies, and factors that influence the effectiveness of human development programs in Mesuji. With this approach, the study is expected to provide a more comprehensive and in-depth picture of the dynamics of HDI achievement and devise appropriate policy recommendations.

The data used in this research are from the BPS of the Mesuji Regency, which includes HDI data from 2010 to 2022. These data include HDI indicators such as health, education, and income. In addition to the BPS data, this study uses secondary data from official documents, government reports, and relevant previous research results.

Numerical data obtained from the BPS will be processed and analyzed in accordance with the applicable HDI indicators. Data processing was carried out in several stages: data collection, data processing, and qualitative analysis. HDI data and indicators were obtained from the BPS and other official sources. The collected data were processed using descriptive statistical methods to describe the development of the HDI in Mesuji Regency during the research period. The results of numerical data processing were then analyzed qualitatively to identify emerging patterns and trends and to understand the factors that influence changes in HDI. This analysis involved an in-depth interpretation of the data and was linked to the local context and policies implemented.

The analysis was conducted by comparing HDI achievements between the initial districts and cities in Lampung to determine the HDI growth trends and components that influence HDI achievements. Calculations to determine growth and the components that influence HDI were carried out as follows:

a. HDI growth

HDI growth shows a comparison between recent achievements and the previous year. The formulation for calculating the HDI growth is as follows:

HDI Growth rate $= \frac{HDIt - HDIt-1}{HDIt-1} \; x \; 100\%$

Information:

HDIt : HDI in year t

HDIt-1 : HDI in year t-1

The following formulation can be used to determine annual growth over several years:

Annual Growth Rate $= [(\frac{f}{s})^{1/y} - 1] \; x \; 100$

Information:

f : final value

s : start value

y : year (total)

With this formulation, if adjusted to the HDI calculation formulation, the formulation becomes

HDI growth per year $= [(\frac{IPMt - IPMt-1}{IPMt-1})^{1/y} - 1] \; x \; 100$

Information:

HDIt : HDI in year t (final)

HDIt-1 : HDI in year t-1 (start)

y : year (total)

b. HDI components

Three main components determine the Human Development Index: life expectancy, education index, and gross national index (Yektiningsih, 2018). Badan Pusat Statistik (BPS) uses the terms health index, education index, and gross national index to calculate the HDI. The HDI was calculated by first calculating the indices of the three components. The calculation formulas for these indices are as follows:

The health index or life expectancy index at birth (UHH) was calculated based on life expectancy (AHH), minimum life expectancy (AHH min), and maximum life expectancy (AHH max) using the following calculation formula:

$$I_{Health} = \frac{AHH - AHH\ min}{AHH\ max - AHH\ min}$$

The education index is the average of the expected years of schooling index (HLS) and average years of schooling index (RLS). HLS and RLS were calculated using the minimum and maximum values, respectively. The calculation formula is as follows:

$$I_{HLS} = \frac{HLS - HLS\ min}{HLS\ max - HLS\ min}$$

$$I_{RLS} = \frac{RLS - RLS\ min}{RLS\ max - RLS\ min}$$

$$I_{Education} = \frac{IHLS - IRLS\ min}{2}$$

Gross National Income (GNI) per capita is calculated based on per capita expenditure, minimum expenditure, and maximum expenditure with a formulation using normal logarithmic calculations as follows:

$$I_{Gross\ National\ Income} = \frac{ln\ (Outcome) - ln\ (Outcome\ min)}{ln\ (Outcome\ max) - ln\ (Outcome\ min)}$$

The minimum and maximum values for each HDI component are detailed in Table 2

Table 2. Minimum and Maximum Values of HDI Components

HDI Components	Unit	Minimum	Maximum
Life expectancy (AHH)	Year	20	85
Expected Years of Schooling (HLS)	Year	0	18
Mean Years of Schooling (RLS)	Year	0	15
Gross National Income (GNI) per Capita:	IDR	1.007.436	26.572.352

Source: BPS Provinsi Lampung, 2023

After calculating the index for each HDI component, the HDI was calculated using the following formulation:

$$\text{HDI} = \sqrt[3]{Ihealth\ x\ Ieducation\ x\ Igross\ national\ income\ x\ 100\%}$$

The results of this quantitative analysis are used as a basis for the second stage, namely, qualitative analysis. This stage aims to explain and deepen the quantitative findings by examining the social context, local policies, and institutional and structural factors that influence the achievement of the Human Development Index in Mesuji. Qualitative data sources included policy documents, development program reports, local government publications, and relevant previous research results. The analysis technique was carried out using thematic and interpretive tracing to identify the dynamics, challenges, and potential for improving human development programs in the area.

Data triangulation was carried out by comparing the quantitative and qualitative results to obtain a comprehensive and valid picture. With this approach, it is hoped that this research will reveal the relationship between the numerical achievement of the Human Development Index and the socioeconomic conditions and development policies in force in Mesuji Regency, as well as provide evidence-based input for the formulation of strategies for improving the Human Development Index in the future.

4. Results and discussions

Figure 2 explains the data and graphs of the achievements of the Human Development Index (HDI) in the initial districts/cities in Lampung in the period 2010-2022.

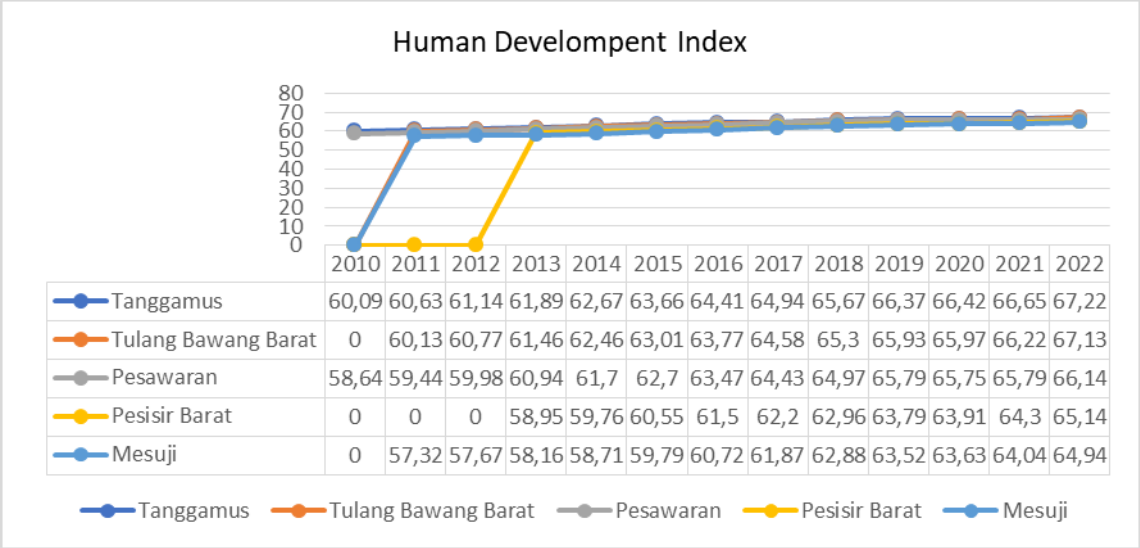

Figure 2. Graph of Initial Regency/City HDI Achievement in Lampung
Source: BPS Provinsi Lampung, 2023

There are five districts with the lowest Human Development Index scores in Lampung: Tanggamus, Tulang Bawang Barat, Pesawaran, Pesisir Barat, and Mesuji. The increase in HDI values for the five districts from 2010 to 2022 showed varying trends. Tanggamus Regency recorded a significant increase in HDI from 60.09 in 2010 to 67.22 in 2022. The average increase in HDI per year was approximately 0.55. This increase reflects the government's efforts to improve the community's quality of life through various development programs that focus on education, health, and economic prosperity. West Tulang Bawang has HDI data showing an increase from 60.13 in 2011 to 67.13 in 2022. With an average annual increase of approximately 0.55, the district has experienced consistent improvement over the years. These improvement efforts may involve implementing better education and health programs, as well as improving public facilities that support people's daily lives. Pesawaran Regency recorded an increase in HDI from 58.64 in 2010 to 66.14 in 2022. The average increase per year was approximately 0.54. This shows significant progress, especially in improving access to and quality of education and health services in the region. HDI data for the Pesisir Barat Regency are available from 2013. In 2013, the HDI was 58.95, and it increased to 65.14 in 2022, with an average annual increase of approximately 0.50. Although the available data are limited, the upward trend indicates improvements in human development indicators. The Mesuji Regency shows an increase in HDI from 57.32 in 2011 to 64.94 in 2022. The average increase per year was approximately 0.52. Mesuji, the district with the lowest HDI among the five districts, showed slower improvement, but efforts are still being made to improve human development indicators.

The peripheral area development theory proposed by Friedmann (1979) emphasizes that the development of peripheral areas (peripheries) is strongly influenced by their relationship with the central area (core). The peripheral regions develop through technology transfer, investment, and development policies driven by the central regions. Using this theory, we can analyze the influence of the geographical location of Mesuji Regency in Lampung, as well as the increase in the Human Development Index (HDI) in Mesuji during the 2010–2022 period.

The Mesuji Regency is located in the Lampung Province in the southern part of Sumatra Island. Mesuji bordered the South Sumatra Province and Tulang Bawang Regency. Mesuji is located near the Sumatra Highway, which is the main transportation route connecting various provinces on Sumatra Island. This facilitates access to larger markets and supports the mobility of goods and services. This transportation route not only connects the Mesuji area with other areas in Sumatra, but also with central areas on the island of Java via ports in Lampung. This good access will increase trade potential and attract investment in Mesuji. The Mesuji Regency is rich in natural resources, such as fertile agricultural land and forests. These resources form the main basis of the local economy and attract investment in the

agricultural and plantation sectors. The presence of fertile agricultural land supports the production of food crops and plantations such as rice, palm oil, and rubber. Vast forests provide timber resources and other forest products that contribute to the local economy.

During 2010–2022, Mesuji Regency experienced a significant increase in the Human Development Index (HDI). Mesuji has implemented various development programs to improve the health, education, and living standards of its population. By improving access to and quality of health services and educational infrastructure, and encouraging the local economy, Mesuji's HDI has consistently increased. Factors such as geographic location that supports regional market access, as well as the potential for natural resources to be used sustainably, also contribute to the positive transformation of the Mesuji Regency's HDI. The increase in the HDI in Mesuji from 2010 to 2022 reflects progress in the dimensions of health, education, and living standards. This increase can be analyzed based on the influence of strategic geographic location and development programs undertaken by regional governments with support from administrative centers.

As explained in the methodology section, in calculating the Human Development Index (HDI), there are three main components: the health index, the per capita expenditure index, and the education index. Evaluation of the achievement of each HDI component in the Mesuji Regency is very important to understand the impact of programs aimed at increasing HDI in the region.

4.1 Health Index

The Mesuji Regency Government has made development efforts and implemented health programs to improve the overall quality of life of the population. Based on table 2, it can be seen that there is an increase in the Mesuji Regency Health Index every year.

Table 3. Mesuji Regency Health Index in 2010-2022

Year	Health Index
2022	68.51
2021	68.26
2020	68.19
2019	68.04
2018	67.71
2017	67.49
2016	67.32
2015	67.15
2014	67.05
2013	66.70
2012	66.57
2011	66.44
2010	66.30

Source: BPS Provinsi Lampung, 2023

The data obtained from 2010 to 2022 show a fairly consistent increasing trend. An increase in the health index reflects improvements in various aspects of health services, nutrition, and access to better healthcare facilities.

From 2010 to 2022, the health index in Mesuji showed a positive increase. The highest health index was recorded in 2022 (68.51). The highest percentage increase occurred between 2018 and 2019, with an increase of 0.49%, indicating significant improvements in health services and effective health programmes during this period. In contrast, the lowest percentage increase occurred between 2020 and

2021, at only 0.10%, which may reflect stagnation or challenges faced in improving public health during that time.

Overall, the average percentage increase in the health index showed a positive trend, although annual fluctuations were observed. This indicates that efforts to improve public health are ongoing despite various challenges. An increase in this health index is an important indicator of the success of health programs implemented by local governments and a basis for planning future health policies.

The increase in the health index in the Mesuji Regency is the result of various health programs that have been implemented effectively and sustainably. Some of these programs include the following:

1. Regional Level UKM and UKP Referral Services
   This program aims to provide quality health services to both public and referred patients. A significant achievement is the increase in access to healthcare services in remote areas. According to BPS data, life expectancy in Mesuji Regency increased from 65.8 years in 2018 to 67.2 years in 2022. This increase shows that the implemented health service programs increase access to and quality of health services for the community, especially in remote areas.
2. Maternal Health Services
   The focus of this program was to reduce maternal and infant mortality. The maternal mortality rate in Mesuji has decreased from 120 per 100,000 live births in 2018 to 95 per 100,000 live births in 2022. This decrease reflects the program's success in providing better health services during pregnancy and childbirth. This programme includes improving health facilities, training health workers, and providing adequate medical equipment.
3. Family Planning Program (KKBPK)
   The implementation of the KKBPK program in KB Village aims to increase public awareness of the importance of family planning. Data show an increase in modern contraceptive use from 56% in 2018 to 64% in 2022, contributing to reduced birth rates and improved maternal and child health. This program also helps reduce the economic burden on families and improve community welfare.

Based on the results of the programs implemented in the Mesuji Regency, efforts to improve health services have had a significant impact on community health. This is also in line with previous studies that have revealed that improving health services has a major impact on public health, which in turn contributes to HDI (Almasi-Hashiani, Sepidarkish, Vesali, & Omani Samani, 2016; Higuita-Gutiérrez & Cardona-Arias, 2018; Purwaningsih, Inderanata, & Fauziah, 2023). The findings of this study demonstrate the commitment to and success in improving the quality of life of Mesuji Regency residents by increasing access to and quality of health services, reducing maternal mortality rates, and increasing awareness of family planning. These programs not only have a direct impact on physical health but also on the social and economic aspects of the community, creating a healthier and more sustainable environment for all residents of Mesuji Regency.

4.2. Education Index

The Education Index is an important component of the Human Development Index (HDI), which reflects a region's level of success in providing access to quality education for its population. Table 4. explains the education index score for Mesuji Regency for the period 2010-2022.

Table 4. Education index of Mesuji in 2010-2022

Year	Education Index
2022	9,445
2021	9,36
2020	9,255
2019	9,115
2018	9,105
2017	8,99

2016	8,665
2015	8,45
2014	8,07
2013	7,95
2012	7,89
2011	7,84
2010	-

Source: BPS Provinsi Lampung, 2023

Based on the data analyzed from 2011 to 2022, a significant increase in the education index can be observed. In 2011, the education index value was recorded at 7.84 and experienced a gradual increase, reaching 9.445 in 2022. This increase indicates ongoing efforts to improve access to and quality of education in the region. The largest increase occurred between 2014 and 2015, with a percentage increase of 4.70%. This can be attributed to the implementation of effective education policies, such as increasing the number of schools, scholarship programs, and training and professional development for teaching staff. On the other hand, the smallest increase occurred between 2018 and 2019, with a percentage of 0.11%. However, the overall trend shows a consistent improvement in the education index.

The average annual increase of 1.81% demonstrates that despite variations in the rate of increase, the overall direction remains positive. This reflects the commitment of the government and society to improve the quality of education as an essential foundation for sustainable human development. By continuing to strengthen the education sector, it is hoped that future generations will be better prepared to face global challenges and contribute to more inclusive economic and social development.

To support this, the Mesuji government implemented several programs to increase the education index, including the following:

1. Revitalization of School Buildings
   The Mesuji Regency Government renovated and repaired elementary and middle school buildings to improve the quality of the learning environment. The results showed that the primary school enrollment rate will increase from 95% in 2018 to 98% in 2022. This finding indicated that a better learning environment encourages more children to attend school. This program includes improving infrastructure, providing adequate learning facilities, and increasing school security.
2. Improvement of Educators and Education Personnel
   Training and capacity-building programs for teachers and education personnel have been implemented to ensure high-quality teaching. Data show an increase in the average national test score from 60 in 2018 to 65 in 2022, reflecting improvements in the quality of education in the Mesuji Regency. This program involved regular training for teachers, providing incentives, and developing an improved curriculum.
3. Development of Traditional Arts and Historical Guidance
   This program aims to preserve local culture and teach regional history to younger generations. In addition to increasing cultural awareness, this program also contributes to increasing the expected number of years of schooling (HLS) from 12 years in 2018 to 13 years in 2022. This program involves extracurricular activities, art competitions, and the provision of teaching materials related to local culture.

Overall, the various efforts undertaken by the Mesuji Regency Government to improve the education index have yielded positive results. Through school-building revitalization programs, enhancing the capacity of teaching staff, and developing traditional arts and historical guidance, the quality of education in the Mesuji Regency continues to improve. This trend is reflected in the increase in elementary school enrollment, national test scores, and expected years of schooling, all of which continue to increase. With strong and sustainable commitment, it is hoped that the Mesuji Regency

Education Index will continue to increase annually, thereby supporting the rise in the Mesuji Regency Human Development Index score.

4.3. Gross National Income Index

Based on Table 5. Gross National Income per capita from 2011 to 2022 in Mesuji Regency shows a significant and varied increasing trend each year.

Table 5. Gross National Income per Capita Mesuji from 2010 to2022

Year	GNI Index
2022	8466
2021	7980
2020	7894
2019	8144
2018	7774
2017	7319
2016	7099
2015	6836
2014	6764
2013	6706
2012	6503
2011	6402
2010	-

Source: BPS Provinsi Lampung, 2023

As Table 5 shows, the per capita expenditure in 2011 was 6,402 and continued to increase, reaching 8,466 in 2022. This increase indicates an improvement in people's purchasing power and access to various basic needs. The largest increase (6.21 %) occurred between 2017 and 2018. This improvement can be attributed to various government programs that have succeeded in increasing people's incomes and economic stability in the region. On the other hand, the smallest increase occurred between 2013 and 2014, at 0.87%. Although fluctuations in the annual percentage increase occurred, the overall trend tended to be positive.

An average annual increase of 2.96% reflects stable and sustainable economic growth in the Mesuji Regency. These data show that the economic policies implemented by regional governments have successfully improved community welfare. To continue to enhance the achievements of the Expenditure Index in the Mesuji Regency, the government is committed to encouraging pro-people policies and implementing sustainable economic programs. The main aim is for per capita expenditure in the Mesuji Regency to continue to increase, creating a more prosperous and highly competitive society. Several programs implemented by the Mesuji Regency Government include the following.

1. Low-Interest Loans
   This program provides low-interest loans to the public for working capital credit. Data show an increase in per capita income from IDR 10 million in 2018 to IDR 12 million in 2022. This indicates that better access to capital drives local economic development. This program includes providing microloans, entrepreneurship training, and monitoring the use of funds.
2. Supervision of Subsidized Fertilizer and Staple Goods Traders
   Strict monitoring of the distribution and prices of subsidized fertilizers and basic goods ensures availability and affordability for the community. Data show a 5% decline in the prices of basic goods during the 2018–2022 period, which helps increase people's purchasing power. This program involves coordination with distributors, regular price monitoring, and actions against distribution violations.
3. Facilities and Infrastructure Assistance

Various forms of assistance, such as ships, motorboats, fish processing equipment, and fish cultivation facilities, have been provided to increase the income of people who depend on the fisheries sector. Data show an increase in fish production from 10,000 tons in 2018 to 12,500 tons in 2022, which contributes to improving the welfare of fishing communities. This programme included the provision of production equipment, cultivation training, and marketing assistance.

Through these various programs, the government strives to continue to encourage inclusive and sustainable economic growth, as well as to improve the quality of life of the people in the Mesuji Regency. Additionally, these programs reflect the regional government's commitment to encouraging pro-people policies and sustainable economic programs to create a prosperous and highly competitive society in the Mesuji Regency. This success must be maintained through strong collaboration between the government, society, and various other stakeholders.

5. Conclusion

5.1. Conclusion

The program aimed at increasing the Human Development Index (HDI) in Mesuji Regency has shown positive results from 2010 to 2022, yet the region's HDI remains classified as "medium" compared to the national average. HDI improvement is driven by enhancements in three key components: life expectancy (AHH), expected years of schooling (HLS), and per capita expenditures (PPK). Key factors influencing HDI progress in Mesuji Regency include successful initiatives such as the low-interest loan program, which has boosted community per capita income; strict oversight of subsidized fertilizer and basic goods distribution to enhance purchasing power; and infrastructure support for the fisheries sector, which has increased fish production and community welfare. However, significant challenges remain, such as high unemployment, poverty, and inadequate rural infrastructure.

5.2. Limitation

The time analysis in this study covers 2010-2022, or since this district was formed. Therefore, the dynamics and achievements after that year were not considered in the conclusions of this study.

5.3. Suggestion

To address these challenges, several alternatives can be considered.

1. Improving Basic Infrastructures
   Access to essential infrastructure, such as roads, clean water, and sanitation, particularly in rural areas. This facilitates mobility and improves access to basic services.
2. Increasing Budget Allocations for Health and Education
   Allocate more resources to the health and education sectors to enhance community well-being. Prioritize preventive health programs and upgrade educational facilities.
3. Promoting Local Economic Development
   Expand programs supporting local economic growth, including entrepreneurship training and facilitating access to capital. These initiatives will increase per capita income and reduce unemployment.
4. Strengthening Collaboration
   Foster robust partnerships among government bodies, society, and stakeholders. Active engagement accelerates progress toward human development goals in the Mesuji Regency.
5. Monitoring and Evaluation
   Regular monitoring and evaluation of implemented programs to identify obstacles and devise effective solutions. This process is crucial for the continual improvement of HDI achievements.

By implementing these strategies, it is anticipated that HDI achievements in the Mesuji Regency will continue to advance, potentially matching or surpassing national averages. This comprehensive approach seeks to foster sustainable development and enhance the quality of life across the region.

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