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Determinant Factors for Achieving Sustainable Development in Jambi Province

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Abstract

The Human Development Index (HDI) and the poverty line are important indicators in measuring community welfare and are in line with the Sustainable Development Goals (SDGs) initiated by the United Nations (UN). Jambi Province is one of the provinces that has an average HDI below the national average with a high poverty rate. The purpose of this study was to analyze and examine the determinants of the HDI and Poverty Line in Jambi Province. The method used is a qualitative approach using SLR bibliometrics and a quantitative approach with panel data in 11 districts/cities in Jambi Province with a research year of 2017-2023. The results of the qualitative approach show that the productivity of literature related to the Human Development Index (HDI) and Poverty fluctuated during 2021-2024 with the highest growth in 2023 and 2024. The results of the quantitative approach show that all independent variables have a significant effect on the Human Development Index (HDI). Meanwhile, only the education budget and Regional Independence Index variables do not have a significant effect on the poverty line. Recommendations based on research results, the Central Government and Jambi Province need to encourage inclusive economic growth to accelerate the improvement of social welfare, need to strengthen sustainability-based village development programs to improve the quality of life of the community. The government needs to strengthen regional financial management mechanisms to ensure more efficient and effective public spending that has an impact on community welfare so that the achievement of SDGs can be realized in 2030.

Keywords: SDGs, HDI, Poverty Line, Jambi Province

1. INTRODUCTION

The Sustainable Development Goals (SDGs), established by the United Nations in 2015, serve as a global blueprint for achieving a more sustainable, equitable, and prosperous future by 2030. These 17 interconnected goals address a wide range of global challenges, including poverty, inequality, environmental degradation, and economic growth. Among these, human development and poverty reduction play a crucial role in ensuring long-term social and economic progress. By focusing on education, healthcare, and economic opportunities, the SDGs aim to enhance individual well-being and promote inclusive growth. Specifically, Goal 1 (No Poverty) and Goal 10 (Reduced Inequalities) emphasize the need for policies and initiatives that empower marginalized communities, improve access to basic services, and create sustainable livelihoods. Addressing these issues is essential for fostering human capital development, reducing disparities, and achieving a more resilient and inclusive global economy.

Indonesia responds to the SDGs through Presidential Regulation (Perpres) No. 59 of 2017 on the Implementation of Sustainable Development Goals and Presidential Regulation No. 111 of 2022 on the Implementation of Sustainable Development Goals. The objectives of the SDGs are outlined in Presidential Regulation No. 111 of 2022, which consists of four key points: (1) ensuring the continuous improvement of economic well-being; (2) maintaining the sustainability of social life; (3) preserving environmental quality and promoting inclusive development; and (4) implementing governance that ensures the improvement of quality of life from one generation to the next. Therefore, the local governments play a crucial role in achieving the SDGs. Characteristics such as land area, the number of regional work units, and regional revenue impact the attainment of the SDGs. Strong leadership and infrastructure are essential for local governments to achieve the SDG targets (Mutiarani & Siswantoro, 2020).

Through their (Government) budgets, these goals can be achieved with several instruments such as education budget. It can improve access to and quality of education, particularly for low-income communities. In their study, Psacharopoulos & Patrinos (2004) found that the return on investment in education is significantly high in developing countries, especially for individuals who complete primary and secondary education. Hanushek & Woessmann (2008) demonstrated that improving education quality, as measured by cognitive test results, has a greater impact on economic growth than merely increasing school enrollment rates.

The Indonesian government, through The Law No. 22 of 1999 on Regional Government and Law No. 25 of 1999, has implemented reforms related to regional autonomy to achieve inclusive and sustainable development for all citizens. The impact of development disparities has led to gaps in human resource quality and poverty levels between provinces. In 2004, the government revised these laws into Law No. 32 of 2004 on Regional Government and Law No. 33 of 2004 on the Financial Balance between the Central and Regional Governments. Subsequently, the regulations on regional government were further revised into Law No. 23 of 2014 on Regional Government.

The concept of regional autonomy allows local governments to directly provide services to the public, which is considered more effective compared to services provided through the central government. The granting of regional autonomy is expected to enhance efficiency in meeting the aspirations and needs of various regions. Ultimately, fiscal decentralization is anticipated to improve the quality of human resources, as represented by the Human Development Index (HDI). As of now, Indonesia's national average HDI reached 73.55 in 2023 and is projected to increase 74.2 in 2024 (Indonesia Statistics Bureau, 2024). Furthermore, DKI Jakarta has maintained the highest average Human Development Index (HDI) in Indonesia over the past three years (2022–2024), with a score of 82.4%. Meanwhile, DI Yogyakarta and East Kalimantan follow in second and third place, with scores of 81.9% and 78.16%, respectively. In contrast, five of ten provinces in Sumatra still have an average HDI below the national average, namely the Bangka Belitung Islands, Lampung, Bengkulu, South Sumatra, and Jambi. A low HDI reflects limited access to education and healthcare, which affects the income of impoverished communities. The higher the Poverty Severity Index (IKK), the more difficult it becomes for the poor to access basic education and healthcare services. Conversely, with a low HDI, it becomes increasingly difficult for communities to escape poverty.

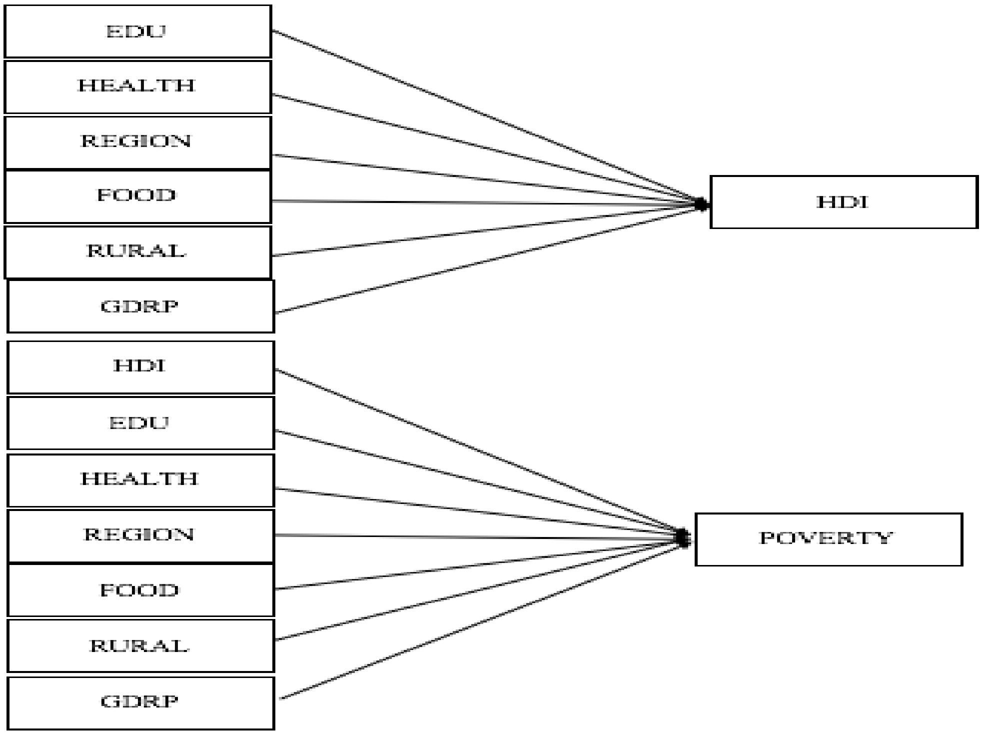
Reliance on the agricultural sector, which is inherently susceptible to global commodity price volatility, natural disasters, and constrained market access, continues to pose significant challenges. Despite urban advancements, several areas in Jambi still grapple with inadequate infrastructure and limited access to essential services, exacerbating poverty levels. Despite Jambi experienced a positive economic growth, poverty remains a persistent challenge due to economic disparities and unequal access to infrastructure and education. Underdeveloped rural areas experience significantly higher poverty rates compared to more advanced urban centers. A major challenge for the Jambi government lies in alleviating poverty and enhancing access to education and healthcare for remote communities. Equitable development and strategic investments in the education and healthcare sectors will be crucial in bridging social gaps and improving the overall quality of life for Jambi's population. Therefore, the main objective of this study is to identify the effect of Jambi's education budget allocation towards HDI in each county. Furthermore, this study also added other variables as determinant factors of HDI such as: Health budget, fiscal decentralization, rural development, and GDRP. Furthermore, this study will also identify the effect of HDI, health budget, fiscal decentralization, rural development, and GDRP on Poverty.

Banerjee & Ghosh (2023) examined how government expenditure on education influences the Human Development Index (HDI) in low- and lower-middle-income countries, particularly in the context of post-pandemic recovery. Their findings indicate that increased education budgets significantly contribute to HDI improvements, underscoring the importance of adequate funding allocation to the education sector for enhanced human development. Tope (2018) highlighted that increased spending on education and healthcare is essential for fostering human capital development in Nigeria. The study found a strong correlation between public education expenditure and human development, emphasizing that inadequate and inconsistent budget allocations have deteriorated the impact of education funding on human capital growth. Similarly, research by Sijabat (2022) suggests that government spending on education represents the most profitable investment in human development over the examined period. Several other studies reinforcing the significance of education expenditure in enhancing HDI include Linhartova (2021);); Patel & Annapoorna (2019); and Suwandaru et al. (2021). Other factors like GDRP (Saksesna & Deb, 2017 and Pugno, 2022), regional independency (Purbadharmaja & Amalia, 2014), rural development (Castaneda et al, 2016), Food security (Soseco et al., 2024) also affect the HDI. These variables: Food security and HDI (Apriliana et al., 2019), GDRP (lin et al., 2010), education and health budget (Celikay & Gumus, 2017 and Masbar & Muhammad, 2019), and rural development (see Hossain et al., 2024).

2. IMPLEMENTATION METHOD

This study employs panel data analysis, a multiple linear regression method that integrates cross-sectional units and time periods (pooled data). One of its key advantages is its ability to explicitly account for individual heterogeneity by incorporating entity-specific variables, allowing for more precise estimations. Additionally, panel data analysis enhances model robustness by controlling for heterogeneity, making it suitable for testing and constructing more sophisticated behavioral models. Furthermore, its reliance on repeated cross-sectional observations over time (time-series) makes it particularly effective for studying static adjustments. Moreover, here is the figure that mentioned the research design.

Figure … Research Design



Sources: Author (2025)

After obtaining high-quality data, the next step is to test the proposed model. In panel data analysis, parameter estimation can be conducted using three main approaches: the Common Effect Model (Pooled Least Squares), the Fixed Effect Model, and the Random Effect Model. The selection of the most appropriate model is determined through a series of diagnostic tests, including the Chow test, the Lagrange Multiplier (LM) test, and the Hausman test. This study employs two estimation models designed to comprehensively examine the relationships between variables:

Y1it = β0 + β1.X1it + β2.X2it + β3.X3it + β4.X4it + β5.X5it + β6.X6it + e1it………(1)

Y1it = HDI
X1 = Education Budget
X2 = Health Budget
X3 = GDRP
X4 = Regional Independence
X5 = Food Security Index
X6 = Rural Development Index
e = Error Terms

Y2it = β0 +β.X1it +β2.X2it +β3.X3it+β4.X4it+β5.X5i+β6.X6it + +β7.X7it e2it…..(2)

Y2it = Poverty
X1=HDI
X2 = Education Budget
X3 = Health Budget Pendidikan
X4 = GDRP

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X5 = Regional Independency
X6 = Food Security Index
X7 = Rural Development Index
e = error term

This study also use Systematic Literature Review (SLR) to broaden the quantitative results and assess the productivity of literature on this topic. Through a rigorous selection and evaluation process, the SLR enables the identification of research trends, key thematic areas, and existing gaps that require further investigation. Additionally, this method ensures the inclusion of high-quality and relevant sources, enhancing the validity and reliability of the findings. Furthermore, the keywords used in this study include: (i) “Human Development Index”; (ii) “Human Development Index” AND “Fiscal Decentralization”; (iii) “Human Development Index” AND “Inflation Rate”; (iv) “Human Development Index” AND “Labor Force”; (v) “Rural Development” AND “Human Development Index”; and (vi) “Poverty Alleviation” AND “Human Development Index”.

The selection of literature in this **Systematic Literature Review (SLR)** follows specific criteria to ensure relevance and academic rigor. First, only studies published between **2021 and 2024** are included to capture the most recent findings. Second, the document type is restricted to **journal articles**, ensuring credibility and methodological soundness. Third, the selected literature must be written in **English** to enhance accessibility and facilitate broader academic discourse. Fourth, the research areas considered in this review include **Social Sciences, Economics-Econometrics-Finance, Energy, and Business-Management-Accounting**, aligning with the study’s objectives. Lastly, the literature search is conducted using predefined **keywords**, focusing on key themes such as the **Human Development Index (HDI), fiscal decentralization, inflation rate, labor force, rural development, and poverty alleviation**. By adhering to these criteria, this study ensures a systematic and comprehensive analysis of the existing literature, allowing for the identification of research trends, gaps, and the field.

3. RESULT & DISCUSSION

Based on the test results for both the IPM and GK models, the Chow Test produced a probability value from the Cross-section Chi-Square that was less than 0.05 (alpha 5%). Therefore, the decision was made to use the Individual Effect model. The next step was conducting the LM Test to determine whether there were no differences between individuals. The LM Test results showed a probability value of less than 0.05, indicating the presence of differences between individuals. Consequently, the next step was to determine whether the Individual Effect model should be estimated using the Fixed Effect or Random Effect approach. The Hausman Test results showed a value lower than 0.05 (alpha 5%), leading to the conclusion that the Fixed Effect Model was the appropriate estimation method.

Variables		Beta	Std. Error	t-Statistic	Prob
C		62.11820	0.975401	63.68480	0.0000
EDUC		0.178283	0.024432	7.297218	0.0000
HEALTH		1.016003	0.375445	2.706128	0.0089
PDRB		0.655597	0.057475	11.40657	0.0000
IKD		-0.039940	0.009285	-4.301609	0.0001

IKP		-0.015798	0.005865	-2.693571	0.0092
IDM		0.222869	0.052006	4.285417	0.0001
Goodness of Fit Test					
R- Squared	0.989801				
Adj. R-Squared	0.987082				
F-Stat	363.9421				
(Prob) F-Stat	0.000000				

Sources: Data Processed (2025)

The estimation results for Model 1 indicate that all variables have a significant influence on the Human Development Index (HDI). An increase in education and health budgets significantly impacts HDI, as both are key indicators within the index structure. This finding support previous studies on the influence of education budgets on HDI, such as those by Meydiasari & Soetojo (2017), Mongan (2019), Lengkong et al. (2019), and Sari et al. (2022). The education budget in Jambi has the potential to accelerate regional economic transformation by enhancing human capital. Greater investment in education can improve workforce quality, facilitating a shift from traditional-sector jobs to higher-value-added sectors. Similarly, increasing the health budget contributes to improvements in infrastructure and services. However, some districts/cities still face inadequacies in healthcare facilities.

The test results for the health budget show a coefficient sign consistent with the theoretical framework proposed in this study, indicating that the health budget has a positive impact on the Human Development Index (HDI) in Jambi Province. Therefore, the significance test can proceed. The test results show a p-value of 0.0089/2, which is less than 0.05 (alpha 5%), leading to the acceptance of H2. Statistically, at a 95% confidence level, there is a positive influence of the health budget on HDI in Jambi Province. On average, the health budget has a positive and significant impact on HDI improvement in Jambi Province, aligning with the HDI framework, which includes health as a key component. The higher the allocated budget, the greater the health-related outcomes achieved. However, in certain areas, such as Batanghari, Tanjung Jabung Barat, and Sungai Penuh City, the impact is positive but not statistically significant. One possible explanation is that an increase in the health budget is not always accompanied by improvements in healthcare facilities, reducing its impact on HDI. Some regions, including Batanghari Regency, still face inadequacies in healthcare infrastructure.

Furthermore, Gross Regional Domestic Product (GRDP) has a positive impact on the Human Development Index (HDI) in Jambi Province. On average, GRDP has a positive and significant effect on HDI improvement in the province. This finding indicates that economic output contributes to enhancing the quality of life for the people of Jambi. These results support previous studies by Muliza et al. (2017) and Maulana et al. (2022) on several provinces in Indonesia. However, there are still two districts/cities, including Tanjung Jabung Timur, where the impact is not statistically significant. One possible reason for this is the relatively high level of income inequality in the region (BPS Tanjabbar, 2012).

Furthermore, the Food Security Index has a negative impact on the Human Development Index (HDI) in Jambi Province. A study by Pertiwi (2020) in Tanjung Jabung Timur district/city revealed a high prevalence of stunting among children under the age of five, reaching 42%, with 54% of the population experiencing food insecurity. This indicates that although Jambi Province may have the potential to provide food, distribution and access to nutritious food remain critical issues. In conditions of inadequate food security, families experiencing food insecurity are more vulnerable to stunting, as they lack access to sufficient and nutritious food to support children's growth. This aligns with findings showing that 54.2% of the population in Mendahara Tengah suffers from low food security. Additionally, reliance on the extractive sector prevents a large portion of residents from benefiting from existing food solutions. The extractive sector tends to favor certain groups, such as corporations, while local residents, especially those with low incomes, often lack equal access to available food resources. As a result, despite the availability of food, food security for a significant portion of the population remains at risk.

Based on the results above, the Rural Development Index has a positive impact on the Human Development Index (HDI) in Jambi Province. Rural development plays a crucial role in improving people's quality of life and has a direct impact on HDI. Through improvements in infrastructure, access to education, healthcare services, and economic empowerment, village development can enhance the social and economic conditions of rural communities. Consequently, effective development efforts at the village level not only contribute to local well-being but also support the achievement of more inclusive and equitable national development goals, as reflected in the increase in HDI. These estimation results also align with the findings of Nurohman et al. (2019) regarding the influence of rural funds on HDI. In general, as rural development improves, it positively impacts the quality of life of the community in terms of economic, social, and environmental aspects. However, some regions, such as Sarolangun and Muaro Jambi, still show insignificant impacts. The high dependence on agriculture, plantations, and forestry in these areas makes their economies highly vulnerable to external factors such as climate change and commodity price fluctuations. This economic dependency may cause external shocks to have a more dominant influence on community welfare, outweighing the positive effects of village development.

Furthermore, in the Poverty Line (GK) model, the adjusted R-squared (adj R^2) value is 0.972607 or 97.26%, meaning that the independent variables can explain 97.26% of the variation in GK in Jambi Province, while the remaining percentage is explained by other independent variables not included in the model. The global test (F-test) results show that the probability value of F-statistic is 0.0000, which is less than the 5% alpha level (0.05). Therefore, the alternative hypothesis (Ha) is accepted, indicating that at least one independent variable in this study significantly influences GK in Jambi Province.

Variables	Beta	Std. Error	t-Statistic	Prob.
C	-2.529.024	0.193330	-13.081	0.0000
IPM	0.039721	0.003205	12.391	0.0000
EDUC	0.002931	0.002867	1.0224	0.3107
HEALTH	0.021515	0.007562	2.8451	0.0061
PDRB	0.014772	0.003358	4.3992	0.0000
IKD	1.60E-05	0.000345	0.0465	0.9630
IKP	-0.000770	0.000443	-1.7387	0.0873
IDM	0.009988	0.001986	5.0291	0.0000
Goodness of Fit Test				

R-squared	0.978735
Adj R-squared	0.972607
F-stat	159.7335
Prob(F-stat)	0.000000

Sources: Data Processed (2025)

The finding of IPM's effect is not consistent with previous research conducted by Prasetyoningrum & Sukmawati (2018) on 32 provinces in Indonesia, as well as Dharmmayukti et al. (2021) in Manado, which found a negative and significant effect. Based on the individual tests conducted, only Jambi City and Sungai Penuh City exhibit a negative and significant effect. This indicates that in these two cities, an increase in the Human Development Index (HDI) contributes to poverty reduction, whereas in other regencies/cities, the effect is the opposite. One possible factor to consider is inequality or uneven development, meaning that an increase in the HDI in some regions may not necessarily lead to poverty reduction. Development efforts, whether by the government or private sector, tend to be concentrated in more developed areas, such as Jambi City and Sungai Penuh City. This disparity results in persistent economic and social challenges in most other regions. One possible factor to consider is inequality or uneven development, meaning that an increase in the HDI in some regions may not necessarily lead to poverty reduction. Development efforts, whether by the government or private sector, tend to be concentrated in more developed areas, such as Jambi City and Sungai Penuh City. This disparity results in persistent economic and social challenges in most other regions.

For the education budget, statistical analysis indicates that there is no significant effect on the Poverty Line in Jambi Province. The lack of a significant influence from the education budget variable contradicts the findings of Hartono (2023) in West Java and also differs in terms of the direction of the effect. Conceptually, an increase in the education budget should lead to poverty reduction by improving productivity, skills, employment opportunities, and ultimately income. A significant positive effect was found in Tanjung Jabung Timur and Tebo. One possible factor to consider is that despite an increase in the education budget, the quality and accessibility of education in remote areas may remain low. Poverty remains a major challenge, which may explain the insignificant impact of the allocated education budget. This situation could lead to additional indirect costs (such as accessibility expenses) that local communities must bear, even if school infrastructure has improved.

Furthermore, the test results for the Gross Regional Domestic Product (GRDP) variable show a p-value of 0.0000, which is less than the 5% alpha level (0.05). This indicates that the GRDP variable has a statistically significant positive effect on the Poverty Line in Jambi Province. The positive and significant impact of GRDP on poverty in Jambi Province may be due to income distribution inequality, despite the increase in GRDP. Conceptually, this estimation result contradicts the expected outcome. Economic growth that is not accompanied by equitable distribution can worsen poverty conditions. This occurs because a significant portion of income is concentrated in specific sectors that do not directly contribute to the welfare of low-income groups. As a result, even with an increase in GRDP, social and economic disparities persist, leading to a high poverty rate. Therefore, it can be concluded that poverty will remain a major issue if economic growth is not accompanied by equitable distribution.

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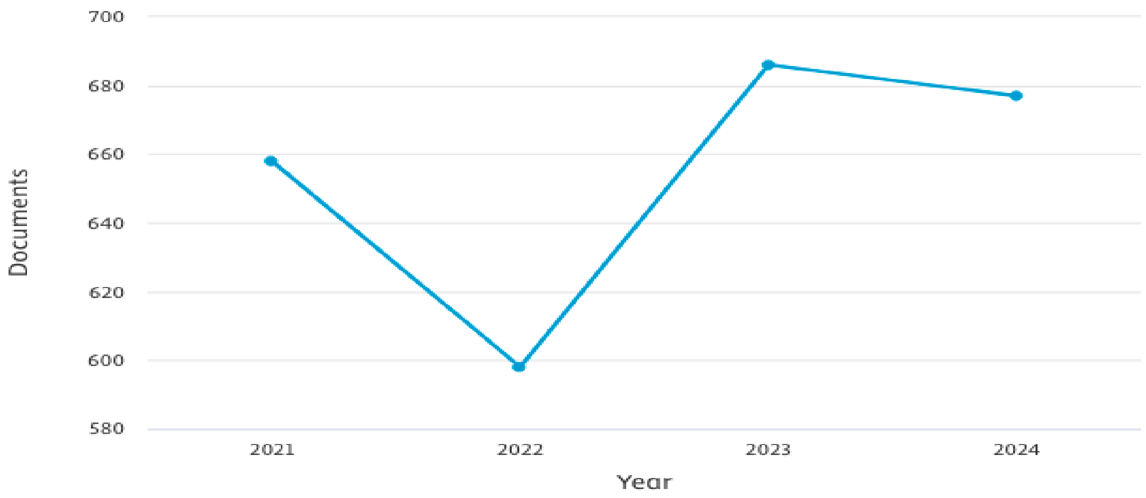
It was also found that the Regional Independence Index (IKD) has no significant effect on the Poverty Line in Jambi Province. This estimation result is inconsistent with previous studies, such as those by Risdiyanto et al. (2023) in various regions of Indonesia/ The insignificant effect may be due to other factors, such as unequal income distribution, disparities in access to public services, and low levels of education and healthcare, which may play a more dominant role in determining poverty levels. Additionally, Jambi Province is largely dominated by the extractive sector, which is highly vulnerable to price and climate fluctuations, potentially influencing poverty levels more directly than IKD, which may not be able to address the region's structural issues. However, some areas exhibit a significant negative effect, such as Merangin, Bungo, and Jambi City, while others, such as Batanghari, Tanjung Jabung Timur, and Sungai Penuh City, show a significant positive effect. Jambi City, with its higher-quality public services and more advanced development compared to other regions, demonstrates that regional independence can significantly influence poverty reduction.

The Food Security Index variable has a negative and significant effect on the Poverty Line in Jambi Province. This result supports the findings of Mahadevan & Hoang (2016) regarding the relationship between these two variables in Vietnam. Food security reflects the availability, accessibility, and stability of food for the population, meaning its improvement can reduce food consumption limitations among vulnerable groups. When people have better access to quality food, they can meet their nutritional needs, positively impacting labor productivity and health. With increased productivity, job opportunities and income levels also rise, ultimately reducing the number of poor individuals. Furthermore, reducing economic pressure on low-income groups can be achieved through food price stability. If food supply is secure and distribution is equitable, price fluctuations can be minimized, preventing economic distress due to rising food costs. However, some regions, such as Tanjung Jabung Timur, Bungo, and Sungai Penuh City, show a significant positive effect. One possible factor is that food security improvements in these areas coincide with rising living costs, including food prices, which keeps low-income groups trapped in poverty due to insufficient purchasing power.

The significant positive effect of the Rural Development Index on poverty in Jambi Province contradicts the expected concept, where improved regional development should ideally reduce poverty levels. One possible factor to consider is the increasing inequality in the effects of development. The benefits of development may only be felt by a select group, such as corporations, while impoverished communities do not experience the same advantages. Additionally, improved development often leads to increased purchasing power. This higher purchasing power drives demand for goods and services, potentially triggering inflation, especially for essential goods. Persistent inequalities further worsen this situation, as low-income groups with limited purchasing power struggle even more to meet their basic needs due to rising prices.

As mentioned before, this study will also identify the progression of Human Development Index and Poverty literature in the Scopus Index. The productivity of literature related to the Human Development Index (HDI) fluctuated between 2021 and 2024, with the highest growth recorded in 2023 at 14.72%.

Figure … Human Development Index Literature Performance 2021-2024

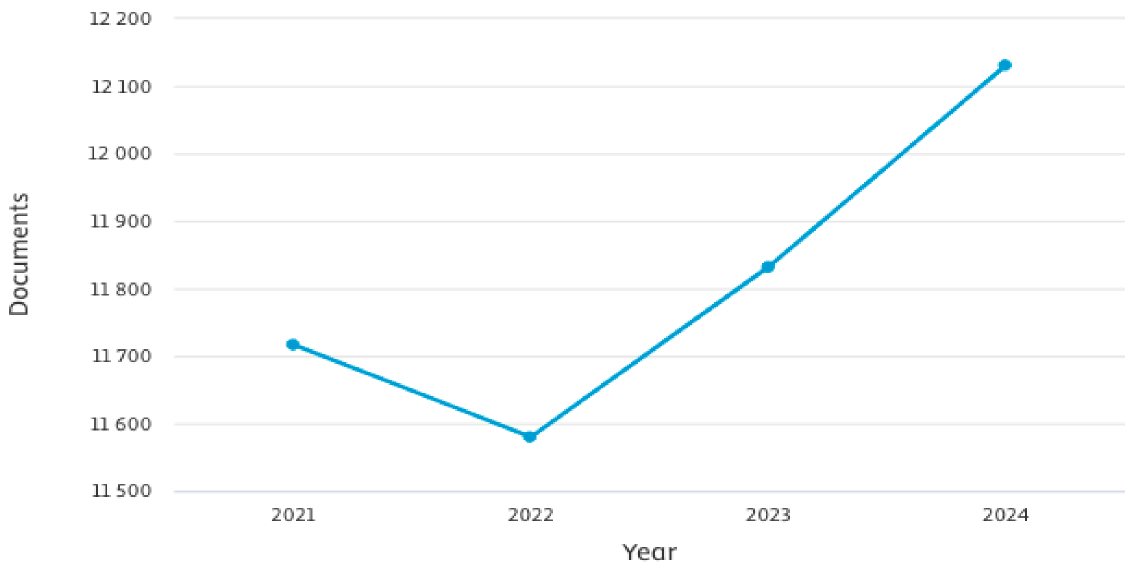


Source: Data Processed (2025)

Furhtermore, brazil ranked as the most productive country in this field, while Indonesia was among the top 10 countries with the highest literature productivity indexed in Scopus.

Meanwhile, the productivity of literature related to poverty showed an increasing trend from 2021 to 2024, with the highest growth occurring in 2024 at 2.53%. Here the following figure that mentioned that point:

Figure … Poverty Literature Performance 2021-2024



Source: Data Processed (2025)

The year 2024 recorded the highest productivity growth at 2.53%, followed by 2023 with a growth rate of 2.18%. Meanwhile, the lowest growth occurred in 2022, with a decline of -1.17%. When observed from the initial year (2021), the total data has grown by 3.53% up to 2024. Furthermore, the United States ranked as the most productive country in this topic, while Indonesia was also among the top 10 countries with the highest literature productivity indexed in Scopus on the subject of poverty.

4. CONCLUSION

The estimation results from Model 1 indicate that all variables have a significant influence on the Human Development Index (HDI). The increase in education and health budgets significantly impacts HDI, as both are key indicators within the index structure. The education budget in Jambi has the potential to accelerate the region's economic transformation by enhancing human capital. With greater investment in education, the quality of the workforce can improve, enabling a shift from traditional sector jobs to higher value-added sectors. Similarly, an increase in the health budget positively affects infrastructure and services. However, some districts/cities still face inadequate healthcare facilities. The positive and significant influence of Gross Regional Domestic Product (GRDP) on HDI indicates that economic output contributes to improving the quality of life in Jambi Province. However, this effect is not observed in some districts/cities due to high income inequality. The relatively high level of inequality in Jambi Province leads to a negative impact of the Regional Independence Index (RII). Districts/cities with a high RII tend to have large Local Own-Source Revenue (PAD), yet their economic structure remains dominated by extractive sectors such as plantations and mining. Income sources concentrated in these sectors do not always directly enhance community welfare, as the economic benefits are often enjoyed more by large corporations or specific groups rather than low-wage local workers. Dependency on extractive industries also hinders economic diversification, which could otherwise create broader and more evenly distributed employment opportunities. Consequently, despite the increase in PAD, public welfare remains constrained by unequal income distribution and limited economic access for local communities. Furthermore, the negative impact of the Food Security Index (FSI) is due to ongoing food insecurity, which limits accessibility in several areas. Additionally, the reliance on extractive sectors prevents a large portion of the population from benefiting from existing food security solutions. The extractive industry primarily benefits specific groups, such as corporations, while local residents—particularly those with low incomes—may still lack equal access to available food resources. As a result, despite food availability, food security remains a challenge for much of the population. Meanwhile, the positive impact of the Rural Development Index on HDI suggests that rural development contributes to improving the overall welfare of the people in Jambi City. Meanwhile, all variables also influence the poverty line, except for the education budget and the Regional Independence Index (RII). However, most variables have an opposite effect from what is theoretically expected. The insignificance of the education budget variable in relation to the poverty line is partly due to the still high poverty rate and the fact that education does not have an immediate impact on reducing poverty in the short term. Meanwhile, for the RII variable, all districts still have low RII levels and remain dependent on fiscal transfers from the central government.

In the qualitative results, the productivity of literature related to the Human Development Index (HDI) fluctuated between 2021 and 2024, with the highest growth recorded in 2023 at 14.72%. Brazil ranked as the most productive country in this field, while Indonesia was among the top 10 countries with the highest literature productivity indexed in Scopus. Meanwhile, the productivity of literature related to poverty showed an increasing trend from 2021 to 2024, with the highest growth occurring in 2024 at 2.53%. The United States ranked as the most productive country in this topic, while Indonesia was also among the top 10 countries with the highest literature productivity indexed in Scopus on the subject of poverty

The results above implicates that the government needs to increase investment in social research and human development by providing research grant funding, strengthening academic collaboration, and optimizing the use of research findings in public policy formulation. Brazil's dominance in HDI studies and the United States' leadership in poverty research can serve as references for Indonesia in designing more effective social policies. Additionally, enhancing collaboration between academic institutions and the government, as well as leveraging digitalization in poverty alleviation, can be key strategies to improve public welfare. To maintain Indonesia's position in global scientific publications, it is necessary to enhance the capacity of academics through research methodology training and access to reputable journals. Integrating HDI studies into development planning is also a crucial step to ensure sustainable and data-driven policies that improve the quality of life.

The findings, which show a significant influence of all variables on the poverty line—except for the education budget and the Regional Independence Index (RII)—as well as the phenomenon of certain variables having an effect opposite to theoretical expectations, imply the following policy considerations: With an optimal budget allocation, the people of Jambi will have better access to education and healthcare services, which in turn will enhance workforce productivity and regional competitiveness. Additionally, investment in these two sectors can reduce poverty rates, increase life expectancy, and drive economic growth based on innovation and the creative industry. The Jambi Provincial Government must ensure the effective management of its budget so that the benefits are evenly distributed, while the private sector can also be encouraged to contribute to workforce skill development through training and vocational education. Thus, these policies will not only accelerate human development in Jambi but also foster inclusive and sustainable economic growth.

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