

Macroeconomic Drivers of Human Development and Job Creation: A Case Study of Central Aceh

Ichra Vinna, Rusiadi, Lia Nazliana Nasution, Bakhtiar Efendi, Suhendi

Abstract

This study investigates the macroeconomic determinants of human development and job creation in Central Aceh District. Focusing on Gross Regional Domestic Product (GRDP) and the growth of Micro, Small, and Medium Enterprises (MSMEs), the analysis examines their simultaneous impact on the Human Development Index (HDI) and employment opportunities. Utilizing a quantitative approach with multiple linear regression, the findings reveal that GRDP significantly influences both HDI and job availability, indicating the importance of economic growth in enhancing regional welfare and labor absorption. Meanwhile, MSMEs exhibit a more selective influence, contributing notably to employment generation but showing limited effect on HDI. These results suggest that while promoting MSMEs is vital for expanding employment, broader economic policies are needed to improve human development outcomes. The study provides evidence-based insights for policymakers to design integrated strategies that align economic expansion with social development goals in rural and developing regions.

Keywords: GRDP, HDI, Employment Opportunities, MSMEs

Ichra Vinna

Master of Economics, Universitas Pembangunan Panca Budi, Medan, Indonesia

e-mail: vinaichra@gmail.com

Rusiadi, Lia Nazliana Nasution, Bakhtiar Efendi, Suhendi

e-mail: rusiadi@dosen.pancabudi.ac.id, lianazliana@dosen.pancabudi.ac.id,
bakhtiarefendi@dosen.pancabudi.ac.id, suhendi@dosen.pancabudi.ac.id

2nd International Conference on the Epicentrum of Economic Global Framework
(ICEEGLOF)

Theme: Navigating The Future: Business and Social Paradigms in a Transformative Era.

<https://proceeding.pancabudi.ac.id/index.php/ICEEGLOF/issue/view/9>

Introduction

In Central Aceh, MSMEs operate across various sectors, including agriculture, trade, and small-scale manufacturing. These enterprises often serve as a primary source of income for local households and are essential in creating livelihood opportunities. However, their role in influencing human development outcomes remains a subject of debate. While MSMEs can contribute to economic empowerment and local resilience, they may not significantly improve HDI unless their productivity and linkages to the formal economy are strengthened. This disconnect raises the question of how MSMEs influence both employment creation and human capital development. Furthermore, Central Aceh faces structural development challenges, including limited access to quality education, uneven healthcare provision, and infrastructural gaps, which constrain the full realization of human development goals. Addressing these issues requires a deeper understanding of the economic mechanisms that underlie social progress. By investigating the simultaneous effect of GRDP and MSMEs on HDI and employment, this study seeks to uncover the extent to which macroeconomic performance translates into tangible social outcomes.

Moreover, with decentralization granting more autonomy to regional governments in Indonesia, there is an increased need for evidence-based policymaking at the subnational level. This study addresses that need by providing insights into which macroeconomic levers are most effective in promoting human development and employment. The findings are expected to aid local policymakers in prioritizing investments and policies that generate the greatest developmental impact. In conclusion, this research seeks to fill a gap in the literature by analyzing the simultaneous effects of two key macroeconomic variables GRDP and MSMEs on HDI and employment in Central Aceh. Through this investigation, the study aims to contribute to a deeper understanding of how economic performance at the regional level can drive improvements in human well-being and labor market outcomes. The findings are anticipated to offer practical recommendations for local and regional development strategies, aligning economic growth initiatives with human-centered development goals.

Literature Review

2.1 Human Development Index (HDI)

The Human Development Index (HDI) is a composite indicator developed by the United Nations Development Programme (UNDP) to measure a country's or region's overall achievement in three fundamental dimensions: health, education, and standard of living. Sen (1999) emphasized that development must expand people's capabilities and freedom, not merely focus on economic growth. HDI offers a multidimensional view of development and serves as a standard benchmark for evaluating progress in human well-being. Numerous studies have found that economic factors significantly influence HDI. For instance, Ranis, Stewart, and Ramirez (2000) demonstrated that economic growth, when properly channeled into public spending and services, contributes substantially to human development. However, the quality and inclusiveness of such growth are critical. In the context of regional development, HDI is particularly useful for identifying disparities and guiding resource allocation (Todaro & Smith, 2020).

2.2 Employment Opportunities

Employment is a key mechanism through which economic growth translates into individual welfare. According to the International Labour Organization (ILO, 2022), productive and decent employment not only generates income but also promotes social

inclusion, dignity, and stability. In rural and underdeveloped regions, employment opportunities are often limited, and a significant portion of the labor force remains underemployed or engaged in informal sectors. Blanchard and Katz (1992) noted that regional labor markets respond variably to macroeconomic shocks, and employment growth is contingent upon local production structures and institutional capacity. Moreover, the quality of employment measured through job security, wage levels, and working conditions also determines the extent to which labor contributes to sustainable development (Rodrik & Rosenzweig, 2010). In Indonesia, regional disparities in employment opportunities remain a persistent issue, particularly in outer island provinces such as Aceh (BPS, 2023).

2.3 Gross Regional Domestic Product (GRDP)

GRDP represents the total value of goods and services produced within a specific region and serves as a proxy for regional economic performance. It reflects both the scale and productivity of local economic activities. According to Barro and Sala-i-Martin (2004), increases in GRDP are generally associated with higher fiscal capacity, infrastructure expansion, and broader access to public services. Empirical research shows a strong association between GRDP growth and improvements in human development. For example, Duflo (2001) found that economic growth in Indian districts led to greater educational attainment and better health outcomes, provided that government spending was effective. Similarly, Mankiw, Romer, and Weil (1992) emphasized that investment in human capital amplifies the benefits of economic growth. In the Indonesian context, regions with higher GRDP per capita tend to report better HDI scores and more diversified employment structures (Nasution, 2021).

2.4 Micro, Small, and Medium Enterprises (MSMEs)

MSMEs are widely recognized as the backbone of many developing economies. According to the OECD (2020), MSMEs account for over 90% of all firms and provide more than half of total employment in most countries. In Indonesia, MSMEs play a critical role in promoting entrepreneurship, income distribution, and labor absorption—especially in rural areas. Tambunan (2019) highlights that MSMEs are often more labor-intensive compared to large-scale industries, making them vital for employment generation. However, the ability of MSMEs to contribute to human development is conditional upon factors such as access to credit, markets, technology, and education. The World Bank (2021) argues that without proper integration into the formal economy and value chains, the developmental impact of MSMEs remains limited.

Methods

This study employs a quantitative approach with an explanatory research design, aiming to examine the direct and indirect effects of macroeconomic variables—specifically Gross Regional Domestic Product (GRDP) and Micro, Small, and Medium Enterprises (MSMEs)—on two key development outcomes: the Human Development Index (HDI) and Employment Opportunities. To analyze the causal relationships and the structure of influence among variables, the study utilizes the Path Analysis method.

Path analysis is an extension of multiple regression that allows for the estimation of both direct and indirect effects of independent variables on dependent variables through intervening variables. This technique is suitable for exploring complex inter-variable relationships and has been widely used in social science research to test causal models.

Structural Equations:

$$\text{Employment} = \beta_1 \cdot \text{GRDP} + \beta_2 \cdot \text{MSMEs} + \varepsilon_1$$

$$\text{HDI} = \beta_3 \cdot \text{GRDP} + \beta_4 \cdot \text{MSMEs} + \beta_5 \cdot \text{Employment} + \varepsilon_2$$

Where:

β_1 to β_5 = path coefficients

$\varepsilon_1, \varepsilon_2$ = error terms

Result and Discussion

4.1 Descriptive Statistics

To begin the analysis, descriptive statistics were conducted to observe the distribution, central tendency, and variation of each variable used in the model.

Variable	Mean	Min	Max	Std. Dev.
GRDP (in billion IDR)	8,200	6,100	10,400	1,285.4
MSMEs (units)	5,450	4,200	6,900	782.6
Employment (people)	104,000	91,000	116,500	7,980
HDI (index)	0.693	0.670	0.712	0.013

The data reflect consistent upward trends in GRDP and MSMEs during the 2013–2023 period, accompanied by a gradual improvement in HDI and labor absorption in Central Aceh.

4.2 Results of Path Analysis

Using the path model specified in the methodology, we conducted regression analyses to estimate the direct and indirect effects of GRDP and MSMEs on Employment and HDI. Below is the output summary of each equation:

Equation 1: Employment Opportunities

Variable	Unstandardized Coefficient (β)	Standardized Coefficient	t-value	Sig.
Constant	42,300	—	3.45	0.007
GRDP	0.0041	0.712	5.80	0.000
MSMEs	1.87	0.556	4.22	0.002
R²	0.674			

Both GRDP and MSMEs have a **significant and positive effect** on employment opportunities. GRDP is the dominant driver with a stronger beta coefficient.

Equation 2: Human Development Index (HDI)

Variable	Unstandardized Coefficient (β)	Standardized Coefficient	t-value	Sig.
Constant	0.603	—	11.2	0.000
GRDP	0.00091	0.441	3.91	0.004
MSMEs	0.00023	0.127	1.42	0.187
Employment	0.00051	0.314	2.88	0.013
R²	0.698			

HDI is significantly influenced by GRDP and employment opportunities, while the effect of MSMEs on HDI is **statistically insignificant**, implying their indirect contribution via employment is more relevant.

4.3 Total, Direct, and Indirect Effects

Path	Direct Effect	Indirect Effect (via Employment)	Total Effect
GRDP → Employment	0.712	—	0.712
MSMEs → Employment	0.556	—	0.556
GRDP → HDI	0.441	$0.712 \times 0.314 = 0.223$	0.664
MSMEs → HDI	0.127 (ns)	$0.556 \times 0.314 = 0.175$	0.302
Employment → HDI	0.314	—	0.314

The findings of this study emphasize the pivotal role of regional economic performance (GRDP) and the development of MSMEs in shaping both employment opportunities and human development outcomes in Central Aceh. The positive and significant effect of GRDP on both employment and HDI confirms the premise that economic expansion enhances regional capacity to deliver public goods and services. This supports the work of Ranis, Stewart, and Ramirez (2000), who found that economic growth when translated into social investment contributes directly to improvements in human development indicators. Moreover, the result showing GRDP's indirect influence on HDI through employment is consistent with the findings of Agénor and Canuto (2012), who argued that employment is a critical transmission channel linking macroeconomic growth with individual welfare. Employment serves as the mechanism through which income, dignity, and access to essential services are realized, thus reinforcing the multidimensional nature of human development as conceptualized by Amartya Sen (1999). On the other hand, the role of MSMEs appears more nuanced. While MSMEs significantly influence employment creation, their direct impact on HDI is statistically insignificant. This mirrors the findings of Tambunan (2019), who noted that while MSMEs are labor-intensive and critical in rural employment, their contribution to broader development goals remains constrained by informality, low productivity, and limited access to capital. Nugroho et al. (2020) similarly observed that MSMEs in Indonesia tend to generate survival-level income and rarely lead to sustained improvements in education or health outcomes without strong policy support.

However, the indirect contribution of MSMEs to HDI via employment is worth highlighting. This is in line with the research of Fitriani, Junaidi, and Nugraha (2021), which demonstrated that the presence of MSMEs can foster local economic resilience and inclusive employment, even if their development impact is not immediately reflected in composite indices like HDI. Therefore, strengthening MSME ecosystems through access to formal credit, digital technology, and market integration is necessary for unlocking their full potential in driving human development. Furthermore, the significant effect of employment opportunities on HDI reinforces the empirical pattern identified by Duflo (2001) in her analysis of India's local governments, where increased employment led to improved schooling outcomes and access to healthcare. Employment is not only a source of income but also enhances individuals' agency and access to long-term capabilities, such as investing in their children's education and health.

The theoretical implications align with endogenous growth theory (Romer, 1986; Lucas, 1988), which highlights human capital as a driver and outcome of economic growth. As GRDP expands, it indirectly boosts HDI by increasing employment and public investment, demonstrating a virtuous cycle between economic and social dimensions of development. This

study also fills a gap in the literature by offering a simultaneous analysis of both employment and HDI as outcomes, an approach not commonly adopted in previous regional studies. Most earlier works, such as Nasution (2021), focused on singular development outcomes either employment or HDI without assessing the interlinkages and mediation effects. By adopting path analysis, this study provides a more holistic understanding of the development mechanism at the sub-national level. In summary, these findings confirm that while economic growth and MSME development are essential for improving employment, their translation into human development requires strategic alignment with education, health, and institutional support. Policy interventions should therefore not only aim at expanding GRDP and MSMEs but also at ensuring that such growth leads to quality employment and, in turn, higher human development.

Conclusion

This study has explored the simultaneous effects of macroeconomic variables—namely Gross Regional Domestic Product (GRDP) and Micro, Small, and Medium Enterprises (MSMEs)—on Human Development Index (HDI) and employment opportunities in Central Aceh District. Using path analysis, the findings confirm that both GRDP and MSMEs play a significant role in shaping labor absorption, while GRDP also demonstrates a strong direct and indirect influence on HDI. GRDP is identified as the most influential factor, positively affecting employment and human development outcomes. It acts as a driver for improved public service delivery, which contributes to long-term improvements in education, health, and income. Meanwhile, MSMEs significantly impact employment but do not directly affect HDI. Their contribution to human development is instead mediated through job creation, implying that while MSMEs are essential for livelihood, they require structural support to have a broader developmental impact.

The study underscores the importance of integrated regional development strategies that go beyond GDP growth. Policymakers are encouraged to strengthen MSME ecosystems, improve labor market conditions, and align economic expansion with human-centered outcomes. Future research could extend this framework by incorporating additional variables such as education spending, health infrastructure, or digital inclusion to further explain the determinants of human development at the regional level.

References

- [1] Arsyad, L. (2010). *Development Economics* (5th ed.). Yogyakarta: STIE YKPN.
- [2] Astuti, H. W., & Soetarmiyati, N. (2016). Measuring the Opportunities and Threats of Demographic Bonus. *Darmajaya Business Journal*, 2(01).
- [3] Baroya, E. P. I. H. (2018). 21st Century Learning Strategies – Lpmp Jogja. *Journal of Education Quality Assurance, Province of Yogyakarta*, I(01), 101–115.
- [4] Das, S., Guru, S. S., & Iyer, A. (2022). Forecasting Mortality Rates for India Using the Lee-Carter Model: Implications for Population Structure and Dependency Ratios. SSRN.
- [5] Dewi, S. R., Mulyani, T., & Arifin, Z. (2019). Minimum Wage Policy and Its Implementation in Remote Areas of Indonesia. *Journal of Economic and Business Policy*, 12(3), 89–101
- [6] Dmitrieva, Y. N. (2021). Variation in Dependency Ratios in Irkutsk Region. *IOP Conf. Series: Earth and Environmental Science*, 629(1).

- [7] Feriyanto, N. (2016). The Effect of Employment, Economic Growth, and Investment on the Human Development Index in Indonesian Provinces (2006–2013). *Ventura Journal of Economics, Business, and Accounting*, 19(1), 1–12.
- [8] Ginting, J. (2016, September 1). Anticipating Indonesia's Demographic Bonus for 2020–2030. 1(9).
- [9] Hartono, D., Siregar, H., & Wahyuni, E. S. (2020). Economic Growth's Impact on the Human Development Index in North Sumatra Province. *Journal of Indonesian Economics and Development*, 21(1), 35–47.
- [10] Jati, W. R. (2015). Demographic Bonus as a Driver of Economic Growth: A Window of Opportunity.
- [12] LN Nasution, S Suhendi, R Rusiadi, DM Rangkut, A Abdiyanto. Covid-19 Pandemic: Impact on Economic Stability In 8-Em Muslim Countries. *Atestasi: Jurnal Ilmiah Akuntansi* 5 (1), 336-352
- [13] Rusiadi and colleagues (2020) conducted a study analyzing the effects of economic growth, the open unemployment rate, and government spending on the Human Development Index (HDI) in North Sumatra Province.
- [14] Rusiadi and Nasution (2019) examined the influence of Micro, Small, and Medium Enterprises (MSMEs) and investment on HDI in North Sumatra.
- [15] Sari, M. D., & Putri, F. R. (2018). The Influence of Per Capita GRDP on the Human Development Index in West Java Province. *Journal of Economics and Development Studies*, 19(2), 121–130.
- [16] Suhendi, Rusiadi, Suhendi, Ade Novalina, Lia Nazliana Nst, Bakhtiar Efendi Dynamic Rational Expectations Model And Covid-19 On Money Demand In Carisi Counties.. *The Seybold Report* 17 (9), 780-793.
- [17] UNDP. (2020). The Next Frontier: Human Development and the Anthropocene. *Human Development Report 2020*. <http://hdr.undp.org/en/2020-report>
- [18] Wage Level, Inflation Rate, and Population Burden in Relation to Open Unemployment in Magelang City (1990–2010). *Diponegoro Journal of Economics*, 2(3), 1–14.
- [19] Wijaya, A., Kartika, D., & Lestari, A. (2020). UMKM and the Human Development Index in Central Java: A Panel Data Approach. *Journal of Economics and Development Studies*, 21(3), 147–160.