ASSESSING INCLUSIVE GROWTH AND INCLUSIVE GREEN GROWTH ACROSS DISTRICTS AND CITIES IN SOUTH KALIMANTAN PROVINCE

Khubbi Abdillah[1*], Muhamad Rusmin Nuryadin[2]

[1,2] Fakultas Ekonomi dan Bisnis, Universitas Lambung Mangkurat, Indonesia

Info Article	ABSTRACT
	This study aims to analyse the achievement of inclusive growth, inclusive green growth, and balanced inclusive green growth in 11 districts and 2 cities in South Kalimantan province in 2024. Based on the inclusive growth index analysis that has been carried out, it shows that 9 regions are classified as satisfactory; the remaining 4 districts are classified as unsatisfactory because the IGI score is below 4 points. Seen from the IGGI analysis, it shows that the average existing region has a low and very low score, which indicates that growth is not yet inclusive from the social, economic, and environmental dimensions. However, the BIGGI calculation shows an increase in scores, although not optimal. Quadrant 1 includes only 4 regions in the quadrant analysis. This means that 9 regions experience inequality in inclusive green growth. The results of the analysis can be used as a reference for local governments in improving the quality of economic growth by paying attention to improvements in macroeconomic indicators and improving the quality of human development.

1. INTRODUCTION

The concept of general economic growth describes the output of goods and services produced over a specific period, ignoring environmental degradation factors. Growth with inclusive environmental and socio-economic protection makes the concept of general economic growth less relevant to current conditions (Khan et al., 2025). Therefore, a new growth model is needed that combines environmental, social, and economic sustainability. The aspect of environmental sustainability is summarised in point 7 of the MDGs, which explains sustainable development without environmental damage and excessive exploitation of natural resources (Dong et al., 2025).

In contrast, inclusive growth emphasises not only the ability of a country/region to drive economic growth but also correlates with poverty reduction, equitable income distribution, and increased employment opportunities (Kusumaningrum & Yuhan, 2019). Therefore, inclusive green growth is more appropriate in terms of environmental protection, political engagement, ease of doing business, public services, infrastructure improvements in various regions, and ease of employment for all genders. It also enhances local economic potential to reduce income disparities between regions (Aminata et al., 2022).

Inclusive green growth (IGGI) is an alternative concept that combines environmental, social, and economic dimensions to create economic

opportunities and expand sustainable development equitably to all levels of society, ensuring equal access to education and health (Liderson & Pasaribu, 2019). Furthermore, communities receive equal rights and opportunities for political participation. Thus, inclusive green growth emphasises intergenerational balance and ensures growth benefits all levels of society (Sitorus & Arsani, 2018).

Sustainable development has the potential for inconsistencies in environmental, social, and economic aspects. Sustainable development issues are crucial amidst global challenges such as climate change, natural resource scarcity, and social inequality (Ma et al., 2024). Inclusive green growth is considered a crucial indicator for measuring sustainable economic progress (Lin et al., 2026). Therefore, inclusive green growth plays a role in identifying areas of strength and weakness, enabling the government to provide solutions to promote sustainable development (Mozaffaripour et al., 2025). Therefore, this study aims to analyse inclusive growth, inclusive green growth, and balanced inclusive green growth in 11 districts and 2 cities in South Kalimantan province.

While the urgency of inclusive green growth is recognised as a solution to environmental disparities and degradation, a research gap remains concerning the inconsistency of achievements across dimensions of sustainable development in regions still reliant on the extractive (natural resource) sector. Previous research has often focused only on partial macro indicators, but has not integrated aspects of sustainable inclusiveness at the regional level, particularly across districts and cities in South Kalimantan Province.

2. METHODOLOGY

This method uses descriptive analysis with secondary data sourced from Statistics Indonesia (BPS) of South Kalimantan Province for 2024 from 11 regencies (Tanah Laut, Kotabaru, Banjar, Barito Kuala, Tapin, South Hulu Sungai, Central Hulu Sungai, North Hulu Sungai, Tabalong, Tanah Bumbu, Balangan) and 2 cities (Banjarmasin, Banjarbaru). The variables used in this study are divided into two: the Inclusive Growth Index (IGI), the Inclusive Green Growth Index (IGGI), and the Balanced Inclusive Green Growth Index (BIGGI).

The Inclusive Growth Index (IGI) variable was developed based on ADB findings (ADB, 2011). However, due to regional data limitations, the variables used include: economic growth rate (PE), percentage of poor population (PM), life expectancy at birth (UHH), expected years of schooling (HLS), average years of schooling (RLS), and the open unemployment rate (TPT) (Hapsari, 2019). The weighted formula used is divided into two groups with a positive (+) relationship, as follows:

$$z_{it}(+) = 10 \left[\frac{y_{itx} - y_{it(min)}}{x_{it(max)} - x_{it(min)}} \right] \qquad (1)$$

while a negative relationship (-) can be written as follows:

$$z_{it}(-) = -10 \left[\frac{y_{itx} - y_{it(min)}}{x_{it(max)} - x_{it(min)}} \right] + 10 \; ; \qquad (2)$$

The z-score formula (1) is obtained from information in Table 1 from the formation of variables that have a positive relationship to economic growth (PE, UHH, HLS, RLS). While the z-score formula (2) variables that have a negative relationship to economic growth (AK, TPT) are based on the normalisation of the highest and lowest scores from each former, divided by the difference, then adding up the total divided by 6. This will then produce the IGI value of each region. The IGI score is divided into 3, namely unsatisfactory (IGI < 4), satisfactory ($4 \leq$ IGI ≤ 7), and very satisfactory ($8 \leq$ IGI ≤ 10).

For the Inclusive Green Growth Index (IGGI), it is formed from three environmental dimensions (households with access to decent housing, access to drinking water, access to decent sanitation), social dimensions (human development index, gender development, women's involvement in parliament, average length of schooling, life expectancy at birth, percentage of women aged 15-49 who have ever been married and given birth by a doctor or midwife), economic dimensions (labor force participation rate, open unemployment rate, economic growth, percentage of households with PLN electricity) (Purwanti & Dianzah, 2023). The IGGI calculation refers to ADB findings, although

there is some information that is adjusted to the availability of regional data (Jha et al., 2018).

The weighted formula used is divided into two, which have a positive (+) relationship as follows:

$$z_{it}(+) = 5\left[\frac{y_{itx} - y_{it(min)}}{x_{it(max)} - x_{it(min)}}\right] + 1; \qquad (3)$$

while a negative relationship (-) can be written as follows:

$$z_{it}(-) = -5\left[\frac{y_{itx} - y_{it(min)}}{x_{it(max)} - x_{it(min)}}\right] + 6 ; \qquad (4)$$

After all variables are normalised, the next step is to calculate the average for each dimension as follows:

$$Dimension\ ke\ i = \frac{(z_1 + z_2 + \cdots z_i)}{i} \qquad (5)$$

The Inclusive Green Growth Index (IGGI) is calculated by dividing each dimension by three as follows:

$$IGGI = \frac{social + economic + environmental}{3} \qquad (6)$$

The absolute total is obtained by subtracting the difference of each dimension sequentially as follows:

$$Total\ absGAP = (econ - soc) + (soc - env)$$
$$+ (env - econ) \qquad (7)$$

CPBL is calculated by weighting each dimension as follows:

$$CPBL_i = -5x\left[\frac{total\ absGAP - \min(tgr)}{\max(tgr) - \min(tgr)}\right] + 6 ; \qquad (8)$$

The Balanced Inclusive Green Growth Index (BIGGI) can be calculated as follows:

$$BIGGI = \frac{3}{4}(IGGI) + \frac{1}{4}(CBPL) \qquad (9)$$

Moreover, the researcher conducted a quadrant analysis with the help of SPSS software to see the comparison of GRDP per capita with the IGI and IGGI results, ideally following the findings from Purwanti & Dianzah (2023) and Hapsari (2019).

3. RESULTS AND DISCUSSION

Table 1 shows that the development of the formation of inclusive growth indicators consisting of economic growth (PE), percentage of poor population (PM), life expectancy at birth (UHH), expected years of schooling (HLS), average length of schooling (RLS), open unemployment rate (TPT)

in 2024 in 11 districts and 2 cities in South Kalimantan Province.

Table 1. Development of Inclusive Growth Formation in 2024

Regency/City	PE	PM	UHH	HLS	RLS	TPT
Tanah Laut	5,01	3,74	70,31	12,43	7,94	3,43
Kotabaru	5,34	4,45	69,93	12,08	7,56	6,05
Banjar	4,76	2,36	68,26	13,04	7,95	2,71
Barito Kuala	5,02	4,36	67,07	12,56	7,92	3,41
Tapin	4,89	3,33	71,35	12,34	8,15	3,86
South Hulu Sungai	5,15	3,38	67,17	12,48	8,09	2,11
Central Hulu Sungai	4,95	5,81	67,12	12,31	8,35	3,20
North Hulu Sungai	4,43	5,75	65,26	13,21	7,78	3,73
Tabalong	4,87	5,64	71,46	12,92	9,15	3,44
Tanah Bumbu	4,82	3,41	71,11	12,61	8,43	6,37
Balangan	4,15	4,87	68,59	13,09	8,13	2,69
Banjarmasin	5,63	4,58	72,10	14,01	10,35	6,56
Banjarbaru	6,71	3,79	72,82	14,86	11,00	4,93

Source: BPS Provinsi Kalimantan Selatan (2025)

Table 1 shows that the development of inclusive growth in 11 regencies and 2 cities in South Kalimantan Province is quite varied in 2024. Banjarbaru City dominates in achieving economic growth (6,71), life expectancy (72,82), expected years of schooling (14,86), and average length of schooling (11,00) among other regencies/cities in the South Kalimantan region. The highest percentage of poor people is in Central Hulu Sungai Regency (5,81) and the lowest in Banjar Regency (2,36). Then, the highest unemployment rate is in Banjarmasin City (6,56) and the lowest in South Hulu Sungai Regency (2,11).

Figure 1. Inclusive Growth Development in 2024
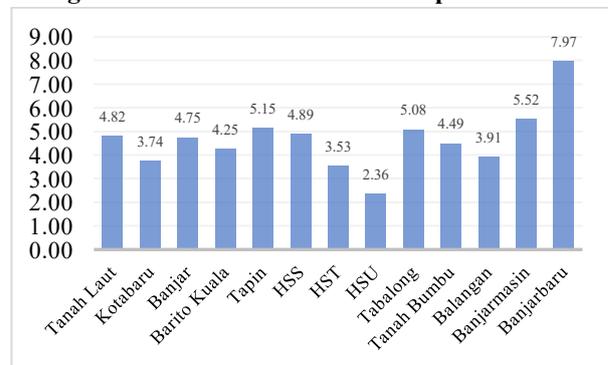
Source: Data Processing Results (2026)

The results of the 2024 inclusive growth analysis in Figure 1 show that regions categorised as unsatisfactory (IGI <4) include: North Hulu Sungai Regency (2,36), Central Hulu Sungai Regency (3,53), Kotabaru Regency (3,74), and Balangan Regency (3,91). Furthermore, regions categorised as

satisfactory (IGI 4-7) include: Barito Kuala Regency (4,25), Tanah Bumbu Regency (4,49), Banjar Regency (4,75), Tanah Laut Regency (4,82), South Hulu Sungai Regency (4,89), Tabalong Regency (5,08), Tapin Regency (5,15), Banjarmasin City (5,52), and Banjarbaru City (7,97). A high IGI indicates relatively inclusive growth, but it also requires attention to improvements in macroeconomic indicators and human development to achieve equitable development.

Agglomeration occurs when economic activity gathers in a location due to nearby company access and labor availability, adequate urban infrastructure (highways, clean water availability, and communication systems) which generates positive externalities that ultimately lower production costs, increase productivity and increase output (Abdel-Rahman, 1990). Urban environments have a high concentration of economic activity (Eberts & McMillen, 1999). The elasticity of activity to population density in urban areas increases productivity by 2% to 4% (Gerritse & Arribas-Bel, 2018). This applies to Banjarmasin City and Banjarbaru City which have the highest IGGI scores compared to other regions due to agglomeration factors, infrastructure access, and adequate facilities.

Table 2. Development of Environmental, Social, and Economic Dimension Scores in 2024

Regency/City	ENV	SOC	ECON	IGGI
Tanah Laut	2,40	3,76	4,35	3,50
Kotabaru	2,12	2,56	1,90	2,19
Banjar	3,51	3,07	4,27	3,62
Barito Kuala	1,00	2,41	4,33	2,58
Tapin	4,08	2,10	3,75	3,31
South Hulu Sungai	3,49	3,04	5,11	3,88
Central Hulu Sungai	4,73	3,27	4,52	4,17
North Hulu Sungai	5,19	2,76	4,08	4,01
Tabalong	4,66	3,83	4,45	4,31
Tanah Bumbu	3,20	3,19	2,89	3,10
Balangan	5,54	3,05	4,56	4,38
Banjarmasin	5,48	5,12	2,97	4,52
Banjarbaru	4,19	5,43	4,28	4,63
Average	3,81	3,35	3,96	3,71

Source: Data Processing Results (2026)

Table 2 shows that Barito Kuala Regency has a low environmental dimension score of 1,00. This score is the lowest compared to other regions, although the average score is lower at 3,81. Balangan Regency has the highest environmental dimension score (5,54), although its social dimension score is lower than Banjarbaru City (5,43). In terms of the economic dimension, South Hulu Sungai Regency has the highest score of 5,11, followed by Balangan Regency and Central Hulu Sungai Regency with 4,56 and 4,52, respectively. However, Kotabaru Regency has the lowest economic dimension score of 1,90, with an average score of 3,96.

The highest IGGI score in South Kalimantan Province in 2024 was Banjarbaru City with 4,63. Banjarmasin City and Balangan Regency held the second and third positions, with 4,52 and 4,38, respectively. Kotabaru Regency had the lowest IGGI score of 2,19. Meanwhile, the average score across the 13 regencies/cities was 3,71. A higher IGGI indicates that economic growth and development are more evenly distributed among the community.

Moreover, findings from Wang et al., (2022) suggest that to promote inclusive green growth in China, the government needs to reduce disparities between provinces. Furthermore, IGGI provides a reference for other developing countries in managing economic development, social inclusiveness, and environmental protection. IGGI in China explains how sustainable development policies can be implemented by 2023 and achieve carbon neutrality by 2060 (Fan et al., 2023).

The economic growth of most provinces in Indonesia is not accompanied by environmental sustainability due to increased economic activity and population growth, which ultimately impacts environmental degradation (Soleh et al., 2025). Regional governments need to integrate IGGI into planning policies to identify disparities and formulate equitable development strategies between regions (Asyrof & Rizaldi, 2025).

**Figure 2. BIGGI Development in 2024**
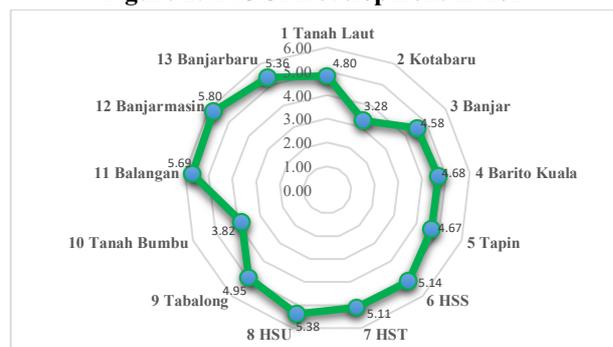
Source: Data Processing Results (2026)

Figure 2 shows the balanced IGGI (BIGGI) development across 11 regencies and 2 cities in

South Kalimantan Province in 2024. Kotabaru Regency had the lowest BIGGI score compared to other regions, at 3,28. Banjarmasin City achieved the highest BIGGI score (5,80), followed by Balangan Regency (5,69), and Banjarbaru City (5,36). BIGGI scores tend to be higher than IGGI scores. A high BIGGI score indicates a balanced arrangement of the dimensions forming the environmental, social, and economic indicators.

Figure 3. Scatter Quadrants of GDP Per Capita and BIGGI in 2024
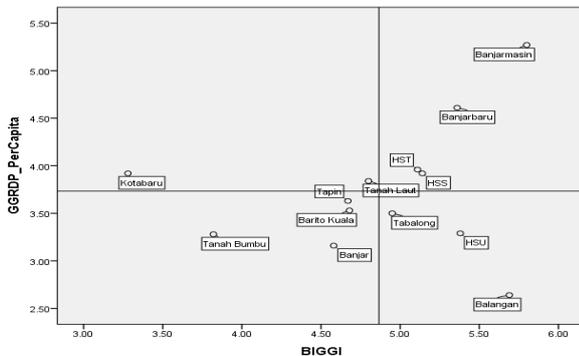
Source: Data Processing Results (2026)

Figure 3 shows a scatterplot of the quadrant analysis between per capita GRDP growth and BIGGI. It shows that regencies/cities in South Kalimantan are spread across quadrants 1 to 4, with overall positive values. Areas in quadrant 1 include Banjarbaru City, Banjarmasin City, Central Hulu Sungai Regency, and South Hulu Sungai Regency. The highest quadrant positions are influenced by BIGGI values, which align with per capita GRDP growth. This means that increasing the inclusive green growth dimension also requires attention to improvements in per capita GRDP, a key indicator of a region's successful economic development.

The regions in quadrant 2 are Kotabaru and Tanah Laut regencies. Quadrant 3 is home to four regions: Tanah Bumbu, Barito Kuala, Tapin, and Banjar regencies. Meanwhile, the regions in quadrant 4 are North Hulu Sungai, Tabalong, and Balangan regencies. Quadrant 4 could be caused by a false growth trap due to mining exploitation and environmental damage costs that outweigh the economic benefits. These three districts are adjacent to each other and frequently affected by flooding, resulting in infrastructure damage. Furthermore, the flooding is caused by a lack of budget (Radani et al., 2024). Of the 13 regencies/cities, only four fall into

quadrant 1. This means that nine regions experience inequality and imbalance in inclusive green growth.

The government needs to gradually change its growth strategy by combining economic, social, and environmental variables (Jia et al., 2023). Policies to strengthen environmental management are implemented by adopting eco-green technologies in economic activities (Li et al., 2024). Traditional growth often results in a surge in carbon emissions and energy consumption (Xu et al., 2025). Dependence on natural resources can be converted by utilizing technology driven by innovation, which aims to increase productivity and economic growth (Sala-i-Martin & Barro, 1995).

4. CONCLUSION

The inclusive growth analysis results indicate that four regions fall into the unsatisfactory category. Nine regions fall into the satisfactory inclusive growth category. Banjarbaru, the capital of South Kalimantan Province, achieved the highest IGGI score. The IGGI analysis shows that Banjarbaru has the highest IGGI score, while Banjarmasin has the highest BIGGI score compared to other regions. Similarly, the quadrant analysis shows that Banjarmasin and Banjarbaru dominate in achieving GRDP per capita, with the highest BIGGI.

The results of the IGI, IGGI, and BIGGI analyses in 11 regencies and 2 cities in South Kalimantan Province can serve as a reference for local governments in improving the quality of economic growth by considering improvements in macroeconomic indicators and human development to achieve equitable development that is not only centered on urban areas but also spreads to rural areas. Furthermore, improvements in environmental, social, and economic dimensions need to be considered to promote balanced, inclusive green growth.

Policy recommendations for regional governments focus more on transforming the economic structure of the extractive sector to downstream green industries based on equitable development across regions and ensuring inclusive and green GRDP growth. Academically, this research contributes to enriching the literature on regional economic growth that balances social, economic, and environmental dimensions through

the IGGI instrument, which is an absolute requirement to avoid the trap of artificial growth in some regions that rely on the economic potential of natural resources.

REFERENCES

Abdel-Rahman, H. M. (1990). Agglomeration economies, types, and sizes of cities. *Journal of Urban Economics*, *27*(1), 25–45.

ADB. (2011). *Framework of Inclusive Growth Indicators: Key Indicators for Asia and the Pacific 2011 Special Supplement*.

Aminata, J., Nusantara, D. I. K., & Susilowati, I. (2022). The analysis of inclusive green growth in Indonesia. *Jurnal Ekonomi & Studi Pembangunan*, *23*(1), 140–156.

Asyrof, R. A., & Rizaldi, M. (2025). Regional Inclusive Green Growth in Indonesia: Unraveling Determinants and Disparities. *Indonesian Journal of Energy*, *8*(1), 75–86.

BPS Provinsi Kalimantan Selatan. (2025a). *Provinsi Kalimantan Selatan Dalam Angka 2025*. https://kalsel.bps.go.id/id/publication/2025/02/28/dc342b31a1e2000c0b099c56/provinsi-kalimantan-selatan-dalam-angka-2025.html

BPS Provinsi Kalimantan Selatan. (2025b). *Statistik Daerah Provinsi Kalimantan Selatan Dalam Angka 2025*. https://kalsel.bps.go.id/id/publication/2025/09/26/6867ebfd207c3191863afa90/statistik-daerah-provinsi-kalimantan-selatan-2025.html

Dong, Z., Yin, C., Zhang, L., Zhang, Z., & Cui, H. (2025). Towards inclusive green growth: Synergistic effects of digital infrastructure and energy transition policies in China. *Journal of Environmental Management*, *395*, 127993.

Eberts, R., & McMillen, D. (1999). *Agglomeration economies and urban public infrastructure, Chapter 38 in Handbook of Regional and Urban Economics, edited by ES Mills and P. Cheshire*. Elsevier Science.

Fan, S., Huang, H., Mbanyele, W., Guo, Z., & Zhang, C. (2023). Inclusive green growth for sustainable development of cities in China: spatiotemporal differences and influencing factors. *Environmental Science and Pollution Research*, *30*(4), 11025–11045.

Gerritse, M., & Arribas-Bel, D. (2018). Concrete agglomeration benefits: do roads improve urban connections or just attract more people? *Regional Studies*, *52*(8), 1134–1149.

Hapsari, W. R. (2019). Analisis Pertumbuhan Ekonomi Inklusif Kabupaten/Kota di Provinsi Jawa Tengah. *Jurnal Litbang Sukowati: Media Penelitian Dan Pengembangan*, *3*(1), 11.

Jha, S., Sandhu, S. C., & Wachirapunyanont, R. (2018). *Inclusive green growth index: A new benchmark for quality of growth*. Asian Development Bank.

Jia, L., Xu, R., Shen, Z. Y., & Song, M. (2023). Which type of innovation is more conducive to inclusive green growth: independent innovation or imitation innovation? *Journal of Cleaner Production*, *406*, 137026.

Khan, K. A., Kaya, E., Çitil, M., Pilatin, A., & Barut, A. (2025). Natural resource trade and financial technology as drivers of inclusive green growth in Belt and Road initiative countries. *Energy Strategy Reviews*, *62*, 101903.

Kusumaningrum, S., & Yuhan, R. J. (2019). Pertumbuhan Ekonomi Provinsi di Indonesia Berdasarkan Indeks Komposit Pertumbuhan Inklusif dan Faktor yang Memengaruhinya [Economic Growth of Provinces in Indonesia Based on Inclusive Growth Composite Index and The Influence Factors]. *Jurnal Ekonomi Dan Kebijakan Publik*, *10*(1), 1–17.

Li, Y., Jin, G., Cui, Z., Lv, B., & Xu, Z. (2024). Does digital inclusive finance promote regional green inclusive growth? *Finance Research Letters*, *62*, 105163.

Liderson, D. M., & Pasaribu, E. (2019). Pembentukan biggi dalam mengukur pertumbuhan inklusif hijau. *Seminar Nasional Official Statistics*, *2019*(1), 266–274.

Lin, C., Dai, G., Liu, Y., Ye, G., & Fu, X. (2026). Exploring the future of sustainable ocean economies: Marine Trade's role in advancing inclusive green growth. *Ocean & Coastal Management*, *272*, 108003.

Ma, R., Liu, H., Li, Z., Ma, Y., & Fu, S. (2024). Promoting sustainable development: Revisiting digital economy agglomeration and inclusive green growth through two-tier stochastic frontier model. *Journal of Environmental Management*, *355*, 120491.

Mozaffaripour, N., Mousavi, M. H., Bazzazan, F., & Safarzadeh, E. (2025). Analyzing the dynamic inclusive green growth index in Iran: A functional data analysis approach. *Journal of Cleaner Production*, *523*, 146337.

Purwanti, Y., & Dianzah, Y. E. N. (2023). Analisis Capaian Pembangunan Inklusif Hijau Pada Tingkat Kabupaten/Kota Di Jawa Timur dengan Balanced Inclussive Green Growth Index. *Jurnal Akuntansi, Manajemen, Bisnis Dan Teknologi*, *3*(2), 223–239.

Radani, R., Arpandi, A., & Hasbiyah, S. (2024). Manajemen penanggulangan bencana banjir pada Badan Penanggulangan Bencana Daerah (BPBD) kabupaten hulu sungai utara (Studi Kasus Amuntai Selatan Dan Amuntai Tengah Kabupaten Hulu Sungai Utara). *Jurnal MSDM Manajemen Sumber Daya Manusia*, *1*(3), 737–747.

Sala-i-Martin, X. X., & Barro, R. J. (1995). *Technological diffusion, convergence, and growth*. Center discussion paper.

Sitorus, A. V. Y., & Arsani, A. M. (2018). A comparative study of inter-provincial inclusive economic growth in Indonesia 2010-2015 with approach methods of ADB, WEF, and UNDP. *Jurnal Perencanaan Pembangunan: The Indonesian Journal of Development Planning*, *2*(1), 64–77.

Soleh, A., Kresnawati, K., Mulyana, A., Setini, M., & Wahyudi, H. (2025). Inclusive Growth in Indonesia: An Environmental Sustainability Approach. *EKOMBIS REVIEW: Jurnal Ilmiah Ekonomi Dan Bisnis*, *13*(4), 3473–3484.

Wang, D., Hou, Y., Li, X., & Xu, Y. (2022). Developing a functional index to dynamically examine the spatio-temporal disparities of China's inclusive green growth. *Ecological Indicators*, *139*, 108861.

Xu, A., Dai, Y., Hu, Z., & Qiu, K. (2025). Can green finance policy promote inclusive green growth?-Based on the quasi-natural experiment of China's green finance reform and innovation pilot zone. *International Review of Economics & Finance*, *100*, 104090.