JURNAL ECONOMINA
e-ISSN: 2963-1181
Volume 5, Nomor 5, Mei 2026
Homepage: ejournal.45mataram.ac.id/index.php/economina

Diverging Pathways of Inclusive Green Growth: Evidence From China and India

Binta Zulfia[1]*, Inayati Nuraini Dwiputri[1], Etty Soesilowati[1], Wen-Chi Huang[2]
[1]Faculty of Economics and Business, State University of Malang, Indonesia
[2]College of Management, National Pingtung University of Science and Technology, Taiwan

Corresponding Author: bintazlf@gmail.com

Article History

Received: 05-05-2026
Revised: 18-05-2026
Published: 30-05-2026

ABSTRACT

Global discussions on sustainable development are increasingly emphasizing inclusive green growth (IGG), which integrates economic prosperity, social inclusion, and environmental sustainability. As the two largest emerging economies in the BRICS group, China and India have followed vastly different development paths; however, comparative assessments that simultaneously evaluate the level and balance of inclusive green growth remain limited. This study addresses this gap by developing the Inclusive Green Growth Index (IGGI) and introducing the Balanced Inclusive Green Growth Index (BIGGI), a composite measure that captures the balance among the economic, social, and environmental pillars. Using panel data from 2010 to 2024, this study compares the development trajectories of China and India, while Shannon Entropy is used as a robustness test to validate the stability of the proposed indices. The results show that China consistently achieves higher IGGI scores, reflecting stronger economic capacity and overall green growth performance. However, its development is characterized by greater imbalances, primarily due to environmental pressures associated with rapid industrialization. In contrast, India exhibits a lower overall IGGI score but demonstrates more balanced progress across all three pillars prior to the COVID-19 pandemic, as well as a more stable post-pandemic recovery. Resilience analysis confirms that BIGGI results are consistent with entropy-based measures, thereby supporting the reliability of the proposed framework. These findings suggest that achieving inclusive green growth requires not only an improvement in aggregate development outcomes but also the maintenance of balance among the economic, social, and environmental dimensions.

Keywords: Inclusive Green Growth, BRICS, Sustainable Development, Public Policy

INTRODUCTION

The Sustainable Development Goals (SDGs) agenda adopted by the United Nations represents a major change in the global development landscape. The SDGs highlight a shared understanding of the opportunities and challenges that will come with countries working toward a more balanced, socially robust, inclusive, and environmentally sustainable growth while maintaining intergenerational stability (Guterrres, 2017). In this context, sustainable development no longer focuses solely on increasing national income, but also include a broader human perspective: lifting people out of poverty, protecting the planet for future generations, and fostering a peaceful, inclusive society are vital for ensuring sustainability for all humans (Gupta & Vegelin, 2016).

The COVID-19 outbreak in early 2020 profoundly transformed the global economic and social landscape. As one of the most widespread public health emergencies in recent history, it has created dual pressures on supply and demand, destabilized financial systems, disrupted international value chains, and heightened macroeconomic uncertainty (Caggiano et al., 2020; Hu et al., 2022; OECD, 2020). Besides its health impact, the pandemic has revealed the fragile structures of many nations—especially those with high inequality, weak social safety nets, and limited environmental resilience (Achim et al., 2022; Topcu & Gulal, 2020). Therefore, recovering from the pandemic requires rethinking growth strategies to focus on resilience, inclusion, and ecological sustainability as key elements of economic renewal (Rosenbloom & Markard, 2020).

Against this background, Inclusive Green Growth (IGG) has become an essential framework that combines the three main aspects of sustainable development—economic prosperity, social equity, and environmental protection. This approach treats marginalized groups as active participants in development, rather than just beneficiaries, through strategies that increase economic opportunities while preserving ecological sustainability. Therefore, IGG acts as a way to promote social justice, boost economic resilience, improve the competitiveness of green industries, and lower long-term environmental risks (Bouma & Berkhout, 2015; Chapman & Shigetomi, 2018; Kourula et al., 2017).

For developing countries, this agenda presents a double challenge: how to balance economic growth and efforts to reduce social inequality without worsening ecological pressures. The balance among these three pillars—economic, social, and environmental—is the key factor in determining whether growth can truly be called inclusive and sustainable.

The 21st century is often called the “Asian Century,” driven by the rise of two major economic powers: China and India. Together, they account for more than one-third of the world's population and play a key role in global economic growth. Although India has not yet experienced the same rapid economic expansion as China, its economy has undergone significant transformation since it began its own economic reform program in 1991. Despite their different socio-political systems, India and China shared one common goal until the late 1970s: prioritizing economic planning to boost growth and maintaining an ideological focus on fairly distributing the benefits of that growth (Taneja, 2020).

Although the political and social systems of the two countries differ greatly—with China adopting a centralized state model and India implementing a parliamentary democracy—both share similar ideological roots in their early development: a focus on strong economic planning and efforts to distribute the benefits of growth evenly. During early industrialization, China built an egalitarian society by prohibiting private ownership and placing economic activities under state control. In contrast, India adopted a mixed economic system, combining the roles of the public and private sectors in a social context still influenced by tradition and hierarchy (Rao, 2011).

However, both China and India face similar challenges in achieving rapid enough economic growth to meet their social aspirations and improve their people's welfare. Although both nations have shown progress, their growth rates are not as fast as those of other East Asian countries such as Japan, South Korea, and Taiwan during the same period. The protectionist policies they implemented early on played an important role in building domestic industrial capacity, which later became the foundation for more competitive development strategies in the subsequent reform era (Bosworth & Collins, 2008; Rao, 2011; Taneja, 2020)

Many previous studies have explored the relationship between economic growth and the environment using the Environmental Kuznets Curve (EKC) framework and research on green growth in BRICS countries (Zulfia, et al., 2025). However, most of these studies focus on single quantitative analyses or regional groups (e.g. Kamah et al., 2021; Mu'min et al., 2024; Zulfia et al., 2025), and comparative approaches between countries, especially between China and India, are rarely documented in academic literature. To bridge this gap, this study aims to develop the Inclusive Green Growth Index (IGGI) and the Balanced Inclusive Green Growth Index (BIGGI) as a multidimensional evaluation framework, along with a robustness test using the Shannon Entropy approach to assess balance. The IGGI is designed to assess development performance based on three main pillars—economic, social, and environmental—while the BIGGI measures the balance among these pillars, reflecting the extent to which progress in one dimension does not come at the expense of others.

RESEARCH METHOD

The Inclusive Green Growth Index categorizes the main variables of the study into three dimensions. First, the economic dimension, assessed through indicators such as the GDP growth rate, international trade, and the dependency ratio. Second, the social dimension, which includes employment rate, life expectancy, labor force participation, mortality rate, electricity access, school enrollment, and others. Third, the environmental dimension, represented by indicators such as carbon emissions and renewable energy. The following steps outline how the IGGI was compiled, as referenced in the Asian Development Bank (2018) dan Mu'min et al. (2024).

Normalize each indicator's data using the max-min method.

- Normalization for indicators has a positive effect on the preparation of the IGGI.

$$Z = 5\ x \frac{country\ score - minimum\ value}{maximum\ value - minimum\ value} + 1 \quad (1)$$

- Normalization for indicators that have a negative effect on the preparation of the IGGI

$$Z = -5\ x \frac{country\ score - minimum\ value}{maximum\ value - minimum\ value} + 6 \quad (2)$$

After normalization, compute the average of each indicator within each pillar to establish the economic, social, and environmental pillar values. The pillar values are then aggregated to determine the IGGI using the following formula.

$$IGGI = \frac{1}{3}(average\ economic\ pillar) + \frac{1}{3}(average\ social\ equity\ pillar) + \frac{1}{3}(average\ environtmental\ pillar) \quad (3)$$

In addition to calculating the IGGI value, additional calculations are necessary, specifically the IGGI Balance, to determine whether the three pillars perform equally, following these steps: Calculate the total absolute gap

$$Total\ absolute\ gap = |economic\ pillar - social\ equity\ pillar| + |social\ equity\ pillar\ environmental\ pillar| + |environmental\ pillar - economic\ pillar| \quad (4)$$

Normalization of absolute total values

$$CPBi = -5\ x \frac{total\ gap\ score - minimum\ value(gap)}{maximum\ value\ (gap) - minimum\ value\ (gap)} + 6 \quad (5)$$

Finally, calculate the BIGGI value using the equation

$$BIGGI = \frac{3}{4}(IGGI) + \frac{1}{4}(CPB) \quad (6)$$

In addition, a robustness test is required to determine whether the three pillars—economic, social, and environmental—are also balanced in other measurements. In this case, Shannon Entropy is used to test this.

Entropy is a measure of uncertainty based on the explanatory power of a continuous or discrete variable (Luo et al., 2018). In this study, the Shannon Entropy measure will be normalized using the following formula, as cited in Busu & Busu (2018),

$$H(X) = -\frac{1}{ln(n)} \sum_{i=1}^{n} p_i Ln(p_i) \quad (7)$$

To produce an output value between 0 and 1. The closer the value is to 1, the more balanced and the better the country's level of green inclusivity.

Table 1. Components of Inclusive Green Growth

Indicator	Source	Unit	Direction
Economics			
GDP per capita growth (annual %)	WDI	annual %	(+)
GDP per capita (constant 2015 US$)	WDI	Per-capita	(+)
Inverse CV of GDP per capita growth	WDI	Intensity	(+)
Trade (% of GDP)	WDI	% of GDP	(+)
HH Market Concentration Index	WITS (World Integrated Trade Solution	Index	(+)
Age dependency ratio	WDI	% of working-age population	(+)
Adjusted savings: net national savings	WDI	% of GNI	(+)
General government gross debt	IMF	% of GDP	(+)
Social			
Employment to population ratio, 15+, total (%) (modeled ILO estimate)	WDI	% of population	(+)
Primary enrollment gender gap	WDI	years	(-)
Life expectancy gender gap	WDI	years	(-)
Labor force participation gender gap	WDI	years	(-)
Life expectancy at birth, total	WDI	years	(+)
Mortality rate, infant	WDI	per 1,000 live births	(+)
People using safely managed sanitation services	WDI	% of population	(+)
Access to electricity	WDI	% of population	(+)
Political Participation Index	Global Change Data Lab	Index	(+)
Environmental			
Total natural resources rents	WDI	% of GDP	(-)
Renewable internal freshwater resources per capita	WDI	Cubic meters/capita	(+)
Water productivity, total	WDI	constant 2015 US$ GDP per cubic meter of total freshwater withdrawal	
CO2 per GDP	WDI	Ton/capita	(-)
Energy intensity level of primary energy	WDI	MJ/$2021 PPP GDP	(-)
Renewable energy consumption	WDI	% of total final energy consumption	(+)

RESULT AND DISCUSSION

Measurements of inclusive green growth for China and India from 2020 to 2024 show a trend of convergence toward inclusive and sustainable development. Over this five-year period, China's IGGI has tended to show a slowdown. Meanwhile, India's IGGI has shown a growth trend, indicating a transition toward inclusive green growth. Although China maintained a higher absolute IGGI level throughout the pre-pandemic period (2010 to 2019), reflecting a stronger initial capacity for green growth, India's faster rate of improvement demonstrates that its approach is highly adaptive and integrated across all aspects of development.

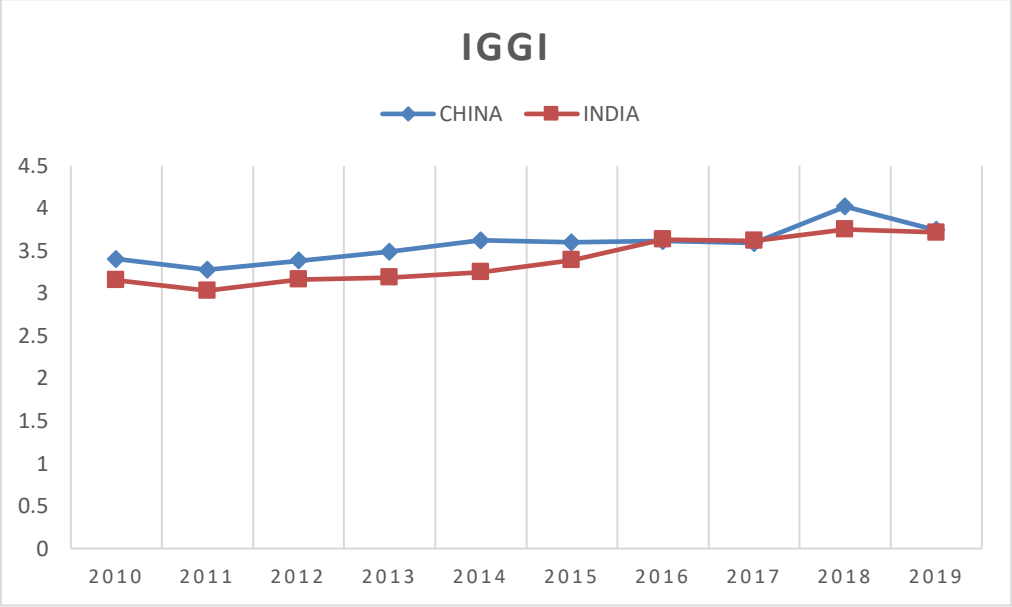


Figure 1. Trends in China and India's Inclusive Green Growth Index from 2010 to 2019 (Pre-Pandemic Covid-19)

Source: Calculated by the authors

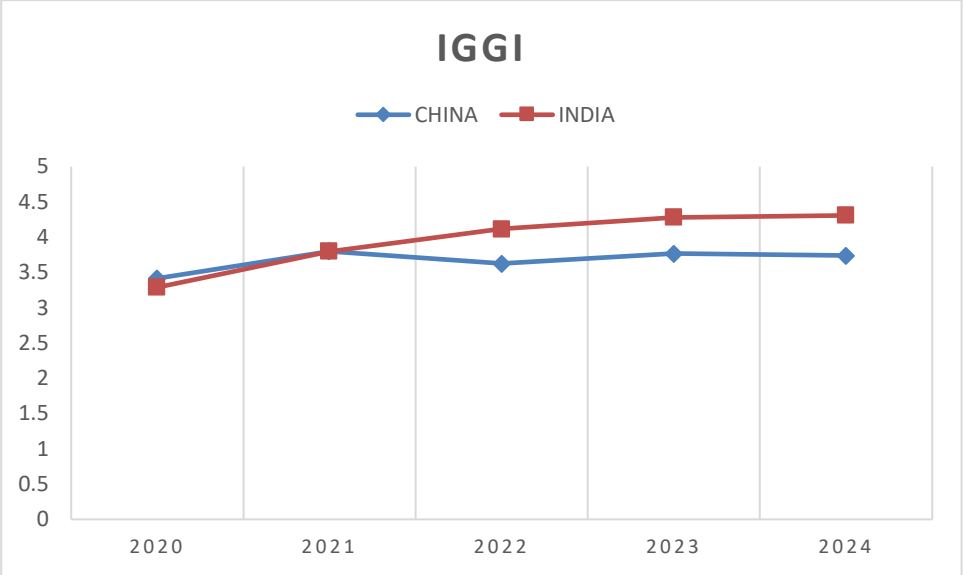
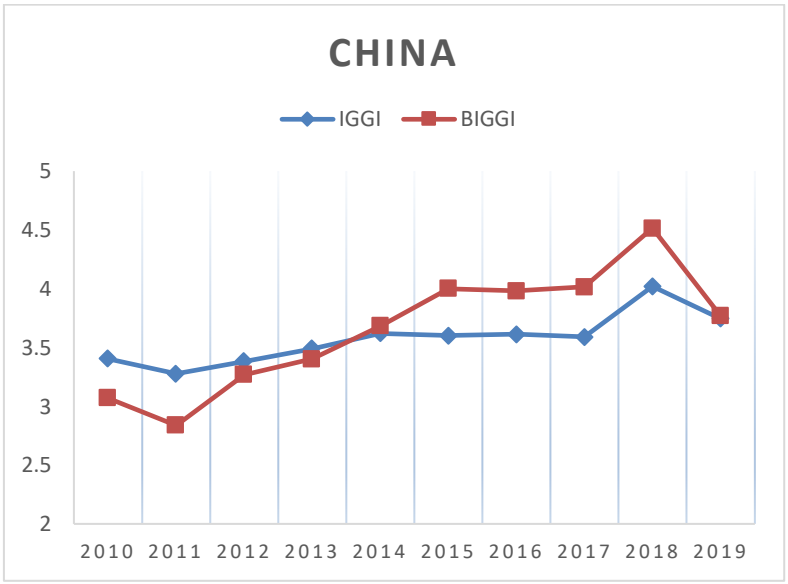


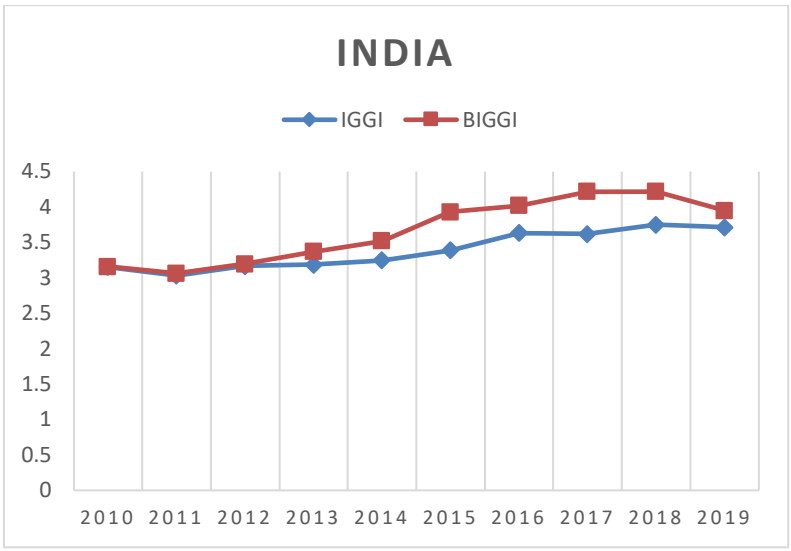
Figure 2. Trends in China and India's Inclusive Green Growth Index from 2020 to 2024 (Pasca-Pandemic Covid-19)

Source: Calculated by the authors

The following analysis compares the IGGI and the Balanced Inclusive Green Growth Index (BIGGI) (see Figures 3 and 4). This comparison is particularly important, as trends in the IGGI and BIGGI serve as barometers of balanced economic growth that encompass social and environmental factors. When viewed by country, China's BIGGI rose from 3.07 to 3.76 in the pre-pandemic period, indicating that while there has been steady progress, the balance among the three pillars remains fairly moderate—suggesting that some areas (likely the environmental pillar) may be lagging behind economic growth.



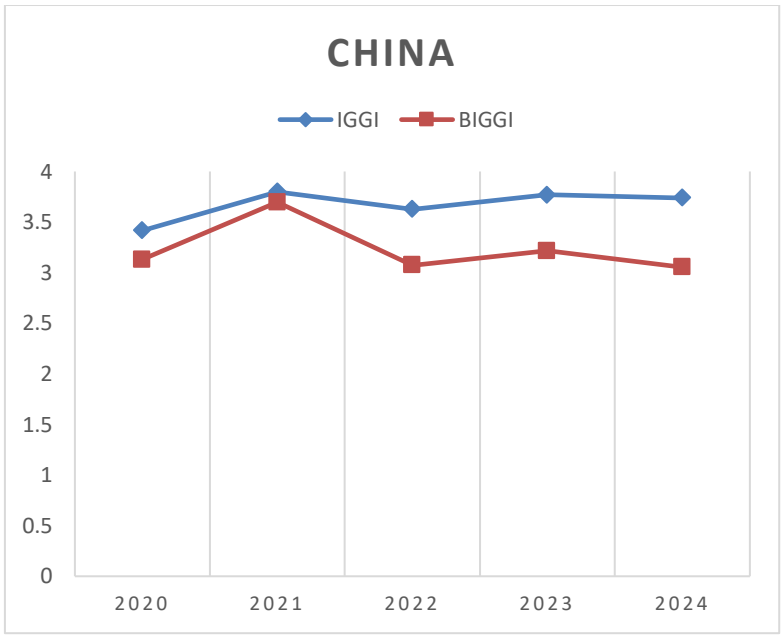
(a)



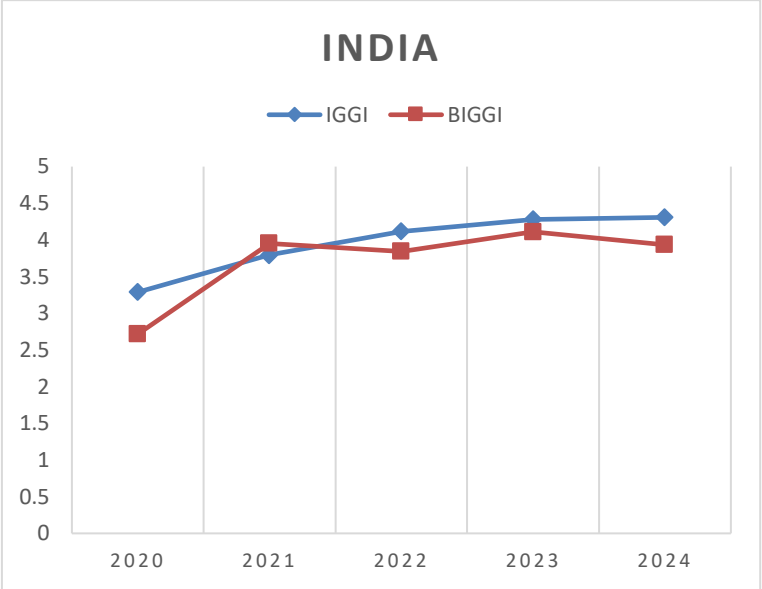
(b)

Figure 3. Comparison of IGGI and BIGGI Trends in China and India Pre-Pandemic

Source: Calculated by the authors



(a)



(b)

Figure 4. Comparison of IGGI and BIGGI Trends in China and IndiaPasca-Pandemic
Source: Calculated by the authors

Meanwhile, India's BIGGI score rose steadily from 3.1 to 3.9 before eventually declining during the COVID-19 pandemic. This pattern indicates that India continues to strive to improve its overall green growth performance, while achieving more balanced progress across the economic, social, and environmental pillars (see Figure 3).

In a direct comparison, China consistently maintained a higher absolute IGGI value throughout most of the pandemic period, indicating a stronger initial capacity for green growth. Meanwhile, India's steady and balanced rise in both IGGI and BIGGI through 2019 signaled a qualitative shift toward more holistic and sustainable development. This convergence pattern suggests that India's inclusive policy framework may have begun to yield tangible structural results, particularly in the pre-pandemic era, while China, with its robust economy, faces the challenge of improving the environmental aspects of its growth without losing economic momentum.

Furthermore, this study breaks down the Inclusive Green Growth Index (IGGI) into its three pillars—economic, social, and environmental—for both China and India. Figure 5 shows that China has experienced fluctuating growth across the economic and social pillars. In this regard, China outperforms India in indicators such as GDP growth, trade share, and life expectancy. However, significant imbalances are evident in the environmental pillar, highlighting the gap between economic progress and environmental sustainability. A considerable gap is visible in the early 2010s.

In China, the dominance of a rapid growth model characterized by high consumption, high emissions, and substantial pollution is at odds with the concept of inclusive green growth. While this model has driven rapid industrial expansion, it has also led to significant wealth disparities, social injustice, and environmental degradation. For example, China's total economy grew from 368 billion yuan in 1978 to 101.6 trillion yuan in 2020, with an average annual growth rate of 9%. However, this success has come with serious environmental and social costs. China's Gini coefficient fell from 0.479 in 2003 to 0.465 in 2019, but it remains above the international warning level of 0.4, indicating enormous income inequality. Moreover, China accounted for 16.34% of global GDP in 2019 while contributing over 27% of worldwide carbon emissions. The cost of environmental pollution is estimated to exceed 8% of the nation's GDP, reaching up to 10% in the economically advanced eastern coastal region (Cooper et al., 2020; Kumar, 2017; Sun et al., 2022).

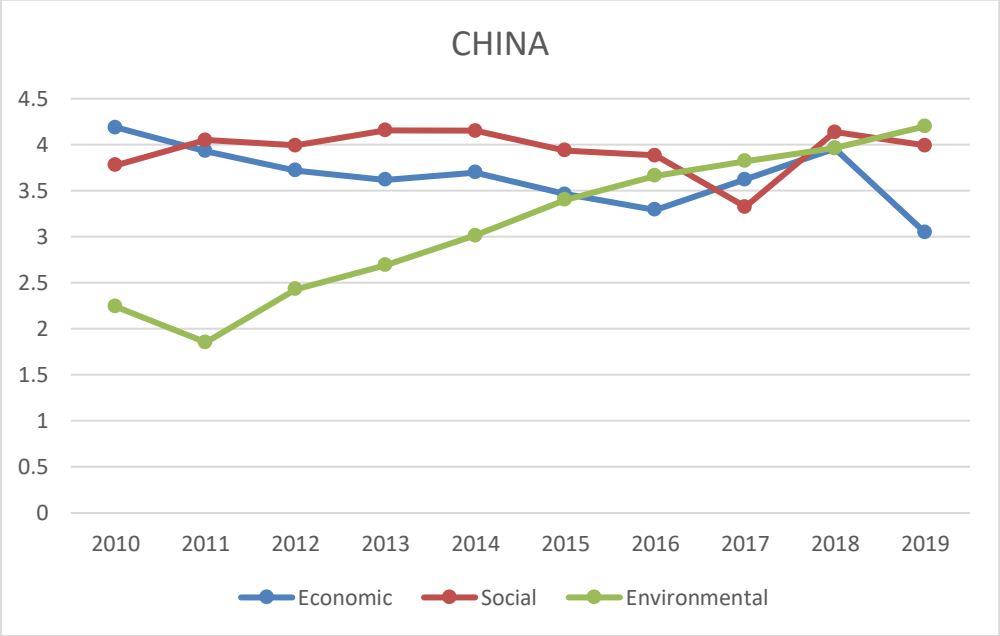


Figure 5. Trends in China's Inclusive Green Growth Index based on each pillar (Pre-Pandemic)

Source: Calculated by the authors

In response to these challenges, China has committed to peaking carbon emissions by 2030 and reaching carbon neutrality by 2060 (Zhao et al., 2023). This ambitious goal marks a strategic shift toward a low-carbon development path in the post-pandemic era. The move to a green recovery is not only a domestic need but also a geopolitical tool to boost China's role in global sustainability governance (Liu et al., 2022).

Zhao et al. (2023) note that Chinese provinces have integrated green transformation objectives into the "Proposal for Formulating the Fourteenth Five-Year Plan for National Economic and Social Development and the Vision for 2035." These plans emphasize low-carbon development, renewable energy expansion, and green recovery initiatives across various sectors. Notably, the National Development and Reform Commission (NDRC) issued the "Opinions on Accelerating the Establishment of a Green Production and Consumption Regulatory and Policy System" on March 11, 2020. This document outlines a comprehensive framework to foster environmentally sustainable production and consumption practices.

Second, the General Office of the Central Committee of the Communist Party of China and the General Office of the State Council jointly issued the " "Guiding Opinions on Building a Modern Environmental Governance System" This directive outlines the institutional framework for environmental governance in China, clarifies the roles and responsibilities of various stakeholders, and reinforces the government's commitment to a multi-stakeholder approach to environmental management.

Third, the People's Bank of China helped introduce the " Green Finance Performance Evaluation Plan for Depository Financial Institutions in the Banking Industry" (July 21, 2020) to standardize green credit assessments and promote sustainable investment. It also collaborated with the China Securities Regulatory Commission and the National Development and Reform Commission to revise the "Green Bond Support Project Catalog," aligning with international green finance standards and expanding support for sustainable industries. The results of these various policy initiatives and collaborative efforts are reflected in the increase in the environmental pillar in the post-COVID-19 era compared to the other two pillars (see Figure 6).

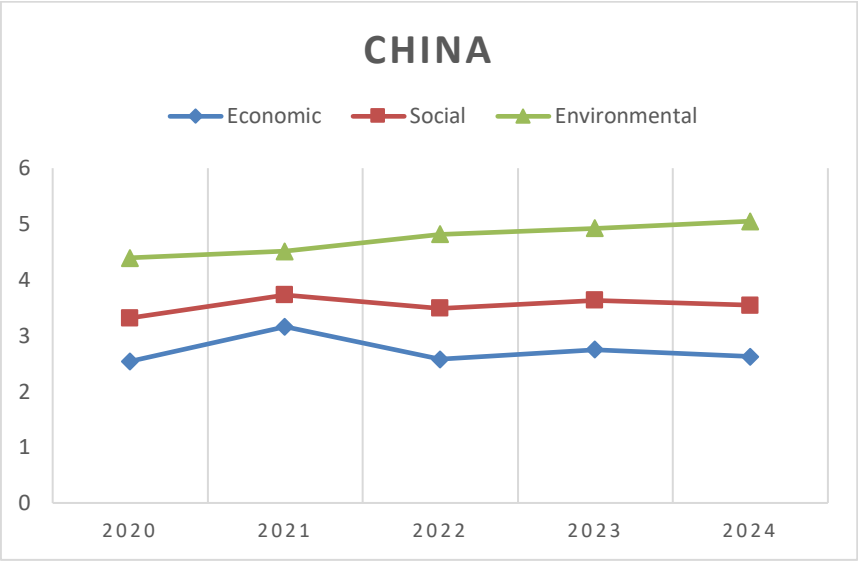


Figure 6. Trends in China's Inclusive Green Growth Index based on each pillar (Pasca-Pandemic)

Source: Calculated by the authors

Unlike China, prior to the pandemic, India demonstrated relatively more balanced growth performance in the environmental pillar of the Inclusive Green Growth Index (IGGI). This result may be partly due to the index's standardization scale (1–6), which accounts for differences between countries. Nevertheless, this finding remains valid upon substantive analysis—India's per capita environmental impact is indeed lower than China's due to its slower industrialization and greater reliance on less carbon-intensive sectors such as agriculture and small-scale industry, with most growth concentrated in services. However, India experienced a decline in the economic pillar through the post-pandemic period (see Figure 8), indicating ongoing structural challenges to its inclusive development.

There was a decline in the economic pillar's value from 2010 to 2019. This may be due to challenges India still faces in poverty alleviation and the distribution of prosperity. Less developed states account for more than 60% of the population living below the poverty line, and the pace of poverty reduction has slowed since the reforms, even though the national average GDP per capita has grown faster. Socially and economically disadvantaged groups—including Scheduled Castes, Scheduled Tribes, Other Backward Classes, minorities, women, and children—have gained the least from economic growth and rising national wealth (see Figure 7).

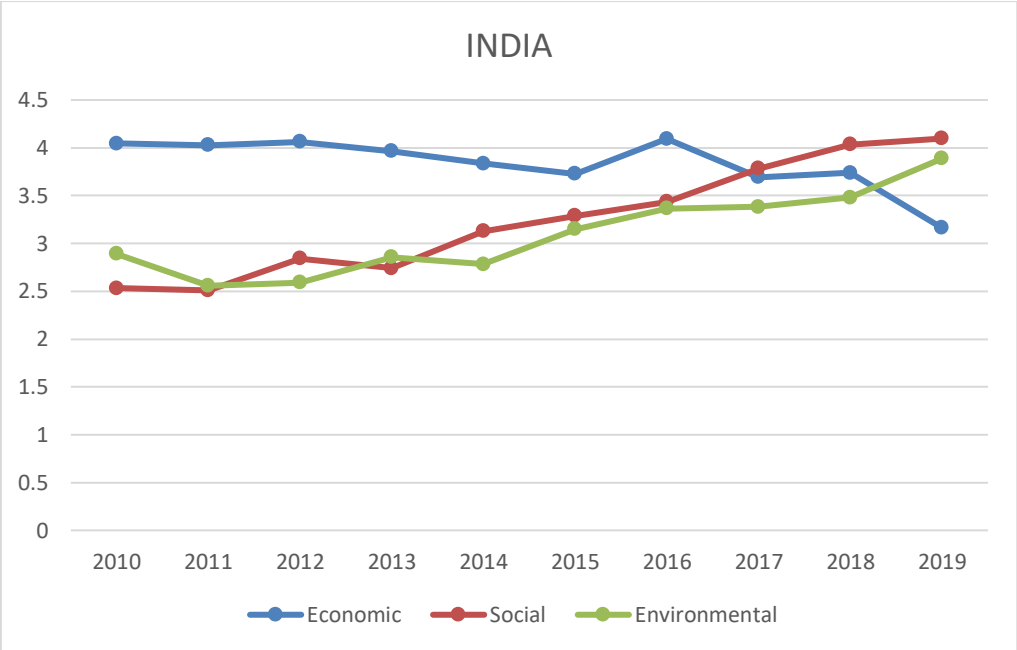


Figure 7. Trends in India's Inclusive Green Growth Index based on each pillar (Pre-Pandemic)

Source: Calculated by the authors

Although India's recent rapid growth has helped lift tens of millions of people out of poverty, its track record in this area is not as impressive as China's. India still faces various internal challenges surrounding class, caste, and identity. While structural barriers to inclusive growth in China are connected to its political system, in India the country's social structure remains the biggest structural barrier (Rao, 2011).

Inequality in India is very high, especially in terms of wealth and income distribution. According to Dev (2024), the richest 10% of India's population controls 77% of the country's wealth. Meanwhile, in 2017, 73% of newly generated wealth flowed to the top 1% of the population. Additionally, India's 670 million people—who make up half of the poorest population—only experienced a 1% increase in wealth. India has undergone an economic transformation from agriculture to industry and services in terms of output composition and employment (Bosworth & Collins, 2008; Dev, 2024). However, structural transformation in the Indian labor market has further worsened this inequality. According to Dev (2024), employment-related structural change has indeed taken place, but the decline in the agricultural sector has been largely absorbed by the informal sector, which has relatively low productivity—especially in construction and informal services like trade, hotels, and restaurants. India has a very large informal sector where output and employment are concentrated in small enterprises (Bosworth & Collins, 2008), rather than in high-value manufacturing or technology-intensive industries. India's large informal economy, where micro and small enterprises still dominate output and employment, has the potential to hinder inclusive growth. Despite progress in non-agricultural employment, the quality of job creation remains low.

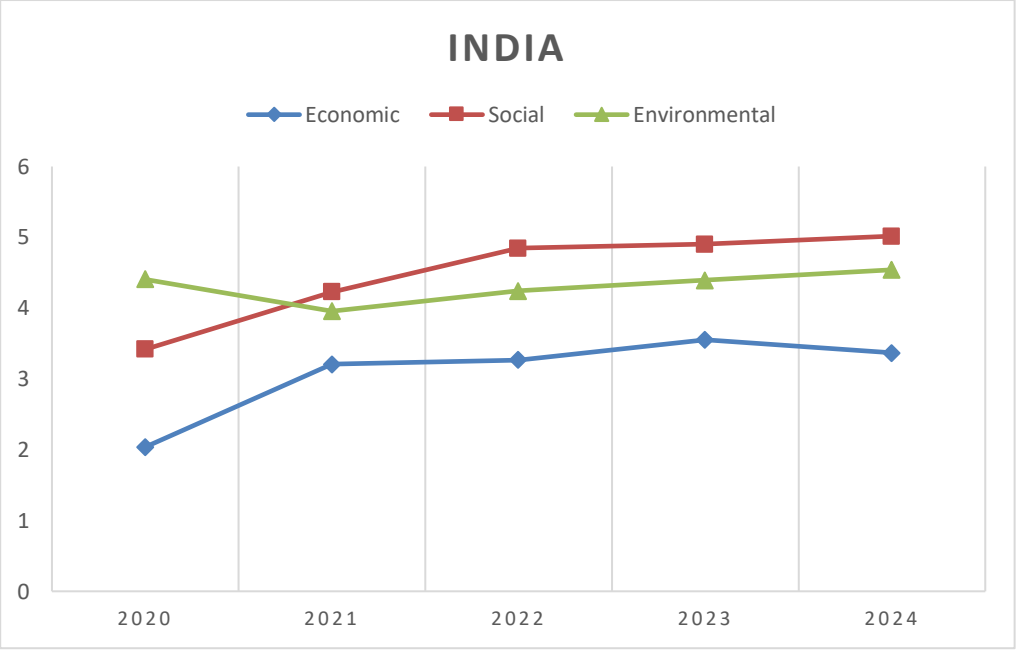


Figure 8. Trends in India's Inclusive Green Growth Index based on each pillar (Pasca-Pandemic)

Source: Calculated by the authors

Robustness Test

The results of the Shannon Entropy calculation show that both China and India have relatively high levels of development balance throughout the 2010–2024 period, with index values approaching 1. This indicates that the distribution of development across the three pillars—economic, social, and environmental—tends to be even in both countries.

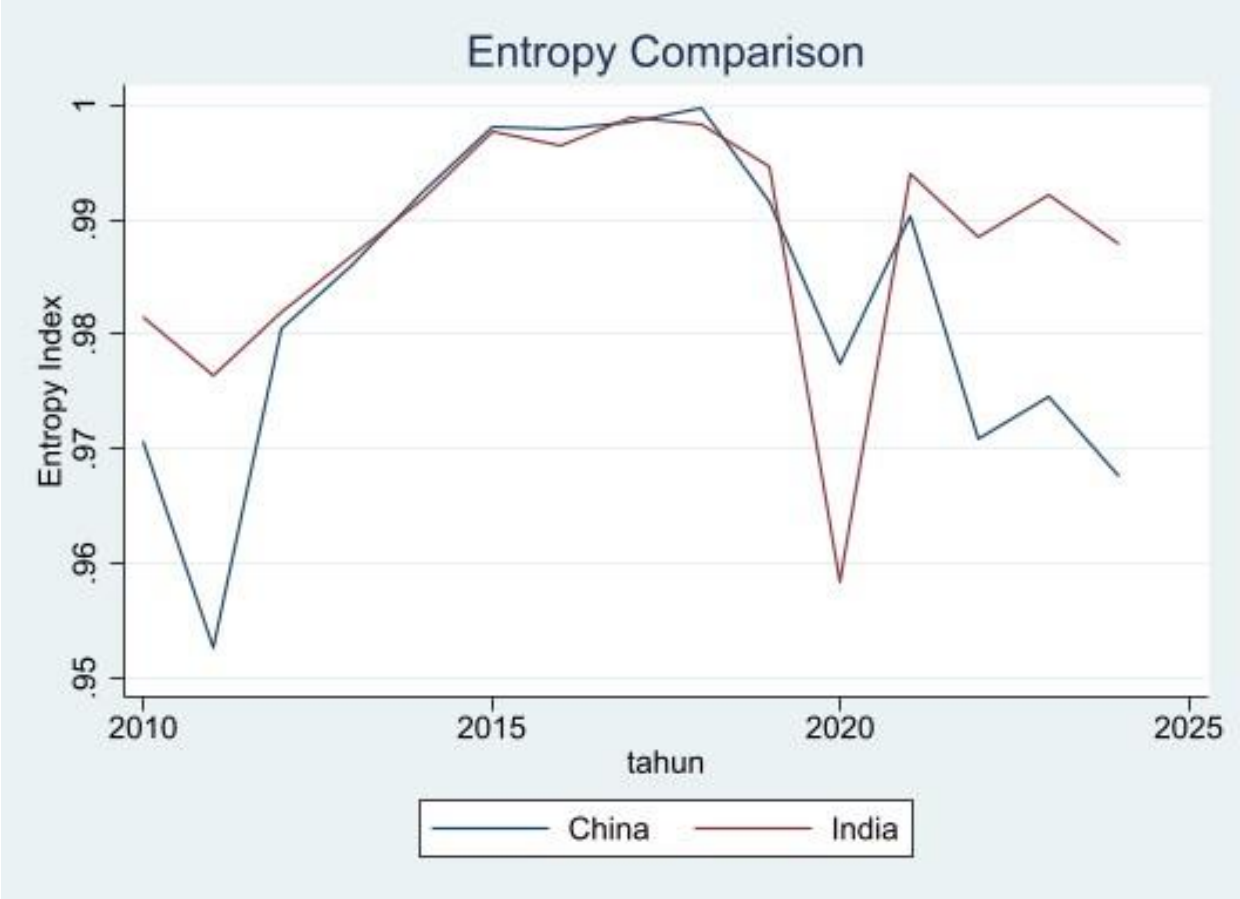


Figure 9. Trends in China and India's Inclusive Green Growth Index measured by Shannon Entropy

Source: Calculated by the authors

However, there are several important dynamics that reflect differences in development characteristics between the two countries. In the early period (2010–2014), India exhibited a relatively more stable level of balance compared to China. This is reflected in China's greater entropy fluctuations, particularly at the beginning of the period, indicating an imbalance among the pillars—likely due to the dominance of economic growth that had not yet been fully offset by the social and environmental dimensions.

Then, during the middle period (2015–2018), both countries experienced a significant increase in entropy values, approaching a maximum point. This indicates a process of convergence toward more balanced development, where economic progress began to be accompanied by improvements in social and environmental aspects. This phase can be interpreted as an optimal period for the integration of inclusive and sustainable development.

Furthermore, during the COVID-19 pandemic (around 2020), a sharp decline was observed in both countries, particularly in India, which experienced the most significant contraction. This decline reflects a major disruption to the balance of development, in which economic and social pressures were not proportionally offset by the capacity of existing systems. Finally, in the post-pandemic period (2021–2024), India demonstrated a relatively faster and more stable recovery in maintaining the balance among the pillars. Conversely, China experienced greater fluctuations and tended to show a gradual decline after 2021. This indicates that although China possesses strong economic capacity, there is a potential trade-off among the pillars—particularly between economic growth and environmental quality or social aspects. Overall, these results are not significantly different from BIGGI measurements, suggesting that IGGI results are robust enough to serve as a measure of green inclusive growth, albeit with different weightings—BIGGI using CPB and Shannon Entropy results.

A comparison of the Inclusive Green Growth (IGG) trajectories between China and India reveals two distinct development paths, yet both share the same goal: sustainable transformation. China's growth pattern follows an institution-driven top-down approach, characterized by state-led coordination, high industrial capacity, and strong regulatory control (Taneja, 2020). However, this has also resulted in environmental costs due to rapid industrialization, as the country's progress in economic and social inclusivity must be balanced by environmental efficiency.

Conversely, according to Rao (2011), India follows a community-driven bottom-up model, where progress in inclusivity and sustainability is shaped by democratic participation, gradual reforms, and a dynamic civil society. India's lower per capita emissions and more stable environmental index scores indicate that its growth is less carbon-intensive. However, deep-rooted social stratification, unequal asset distribution, and labor informality continue to hinder the transformation of growth into equitable prosperity. Despite these challenges, India's more stable progress in the IGGI and BIGGI sectors demonstrates improved policy alignment between inclusion, equity, and environmental transition, indicating that a green India. These differences highlight that there is no single path to inclusive green growth—success depends on aligning national capabilities (Ibrahim & Law, 2016), institutional designs (Dwiputri et al., 2018), and policy priorities with sustainability goals.

CONCLUSION

This study examines the trajectory of inclusive green growth in China and India during the 2010–2024 period by comparing the Inclusive Green Growth Index (IGGI) with the proposed

Balanced Inclusive Green Growth Index (BIGGI). The findings show that although China consistently achieved higher levels of inclusive green growth throughout the study period, its development was characterized by greater imbalances among the three pillars, primarily due to the environmental costs associated with rapid industrialization. In contrast, India exhibited lower absolute levels of inclusive green growth but demonstrated a more balanced development pattern prior to the COVID-19 pandemic and a stronger post-pandemic recovery. These contrasting trajectories indicate that the quality of development cannot be adequately understood through aggregate growth performance alone. Rather, balanced progress across various dimensions is equally important for achieving long-term sustainability.

The Robustnest Test using Shannon Entropy reinforces these findings. Both countries maintained relatively high levels of balance throughout the observation period, despite exhibiting different temporal dynamics. China experienced greater fluctuations related to the trade-off between economic expansion and environmental sustainability, whereas India demonstrated a more stable convergence toward balanced development despite facing persistent structural challenges related to inequality, labor informality, and social exclusion. The consistency between the entropy results and the BIGGI measurements confirms that the proposed index provides a framework for evaluating inclusive green growth.

Beyond the empirical comparison, this study also highlights that China and India represent two distinct pathways toward inclusive green growth. China's institution-driven, state-led model has produced remarkable economic transformation, yet it requires continuous improvements in environmental governance to sustain long-term development. Meanwhile, India's more decentralized, community-oriented approach has facilitated relatively balanced progress, although deep-rooted socioeconomic inequalities continue to limit the inclusivity of its growth. These findings reinforce the notion that development success depends on each country's ability to align institutional capacity, governance quality, and policy priorities with the goals of economic prosperity, social inclusion, and environmental sustainability.

Nevertheless, several limitations must be acknowledged. This analysis focuses solely on China and India and relies on national-level indicators, which may mask substantial regional disparities within each country. Furthermore, this study emphasizes descriptive and comparative assessments rather than causal relationships between policy interventions and inclusive green growth outcomes. Therefore, future research could expand the scope of BIGGI to a broader group of developing countries, including all BRICS members, incorporate subnational data, and use panel econometric or causal inference approaches to examine the determinants of balanced, inclusive green growth. Such developments would further strengthen the utility of BIGGI both as an analytical framework and as a policy evaluation tool for monitoring progress toward the Sustainable Development Goals.

ACKNOWLEDGEMENT

The authors would like to express their sincere gratitude to Universitas Negeri Malang for the financial support, which made the completion of this study possible. Special thanks are also addressed to the discussants who generously shared their expertise, thoughful perspectives, and constructive discussion during the development of this paper. Finally, the authors are grateful to eveyone who contributes to this research. Any remaining errors or omissions are solely the responsibility of the authors.

REFERENCES

Achim, M. V., Safta, I. L., Văidean, V. L., Mureșan, G. M., & Borlea, N. S. (2022). The impact of covid-19 on financial management: Evidence from Romania. *Economic Research-Ekonomska Istraživanja*, *35*(1), 1807–1832. https://doi.org/10.1080/1331677X.2021.1922090

Asian Development Bank. (2018). *Inclusive Green Growth Index: A New Benchmark for Quality of Growth* (0 ed.). Asian Development Bank. https://doi.org/10.22617/TCS189570-2

Bosworth, B., & Collins, S. M. (2008). Accounting for Growth: Comparing China and India. *Journal of Economic Perspectives*, *22*(1), 45–66.

Bouma, J., & Berkhout, E. (2015). A reflection on the meaning and implications for the policy agenda of the Dutch Directorate-General of Foreign Trade and Development Cooperation. *PBL Netherlands Environmental Assessment Agency*, *1708*, 1–29.

Busu, C., & Busu, M. (2018). Modeling the Circular Economy Processes at the EU Level Using an Evaluation Algorithm Based on Shannon Entropy. *Processes*, *6*(11), 225. https://doi.org/10.3390/pr6110225

Caggiano, G., Castelnuovo, E., & Kima, R. (2020). The global effects of Covid-19-induced uncertainty. *Economics Letters*, *194*, 109392. https://doi.org/10.1016/j.econlet.2020.109392

Chapman, A., & Shigetomi, Y. (2018). Developing national frameworks for inclusive sustainable development incorporating lifestyle factor importance. *Journal of Cleaner Production*, *200*, 39–47. https://doi.org/10.1016/j.jclepro.2018.07.302

Cooper, A., Mukonza, C., Fisher, E., Mulugetta, Y., Gebreeyesus, M., Onuoha, M., Massaquoi, A.-B., Ahanotu, K. C., & Okereke, C. (2020). Mapping Academic Literature on

Governing Inclusive Green Growth in Africa: Geographical Biases and Topical Gaps. *Sustainability*, *12*(5), 1956. https://doi.org/10.3390/su12051956

Dev, S. M. (2024). Regional Dimensions in India: Economic Growth, Inclusive and Sustainable Development. *Journal of Quantitative Economics*, *22*(2), 245–296. https://doi.org/10.1007/s40953-024-00403-z

Dwiputri, I. N., Arsyad, L., & Pradiptyo, R. (2018). *The corruption-income inequality trap: A study of Asian countries*.

Gupta, J., & Vegelin, C. (2016). Sustainable development goals and inclusive development. *International Environmental Agreements: Politics, Law and Economics*, *16*(3), 433–448. https://doi.org/10.1007/s10784-016-9323-z

Guterrres, A. (2017). The sustainable development goals report. *United Nations*. https://www.un.org/

Hu, H., Chen, D., & Fu, Q. (2022). Does a Government Response to COVID-19 Hurt the Stock Price of an Energy Enterprise? *Emerging Markets Finance and Trade*, *58*(1), 1–10. https://doi.org/10.1080/1540496X.2021.1911803

Ibrahim, M. H., & Law, S. H. (2016). Institutional Quality and CO2 Emission-Trade Realtions: Evidence from Sub-Sahara Africa. *South African Journal of Economics*, *84*(2), 323–340. https://doi.org/10.1111/saje.12095

Kamah, M., Riti, J. S., & Bin, P. (2021). Inclusive growth and environmental sustainability: The role of institutional quality in sub-Saharan Africa. *Environmental Science and Pollution Research*, *28*(26), 34885–34901. https://doi.org/10.1007/s11356-021-13125-z

Kourula, A., Pisani, N., & Kolk, A. (2017). Corporate sustainability and inclusive development: Highlights from international business and management research. *Current Opinion in Environmental Sustainability*, *24*, 14–18. https://doi.org/10.1016/j.cosust.2017.01.003

Kumar, P. (2017). Innovative tools and new metrics for inclusive green economy. *Current Opinion in Environmental Sustainability*, *24*, 47–51. https://doi.org/10.1016/j.cosust.2017.01.012

Liu, Z., Yin, T., Surya Putra, A. R., & Sadiq, M. (2022). Public spending as a new determinate of sustainable development goal and green economic recovery: Policy perspective analysis in the Post-Covid ERA. *Climate Change Economics*, *13*(03), 2240007.

Luo, Z., Xie, F., Zhang, B., & Qiu, D. (2018). Quantifying the Nonlinear Dynamic Behavior of the DC-DC Converter via Permutation Entropy. *Energies*, *11*(10), 2747. https://doi.org/10.3390/en11102747

Mu'min, M. S., Yaqin, M., & Anam, M. S. (2024). Does energy transition matter to sustainable development in ASEAN? *International Journal of Renewable Energy Development*, *13*(2), 191–205. https://doi.org/10.61435/ijred.2024.59544

OECD. (2020). *OECD economic outlook: Turning hope into reality.* https://www.oecd-ilibrary.org/sites/39a88ab1-en/index.html?itemId=/content/publication/39a88ab1-en

Rao, C. H. H. (2011). India and China: A Comparison of the Role of Sociopolitical Factors in Inclusive Growth. *Economic and Political Weekly*, *46*(16), 24–28.

Rosenbloom, D., & Markard, J. (2020). A COVID-19 recovery for climate. *Science*, *368*(6490), 447–447.

Sun, H., Mao, W., Dang, Y., & Luo, D. (2022). What inhibits regional inclusive green growth? Empirical evidence from China. *Environmental Science and Pollution Research*, *29*(26), 39790–39806. https://doi.org/10.1007/s11356-021-17250-7

Taneja, P. (2020). Economic development and inclusive growth: China and India. In *Inclusive Growth in Australia* (pp. 3–18). Routledge.

Topcu, M., & Gulal, O. S. (2020). The impact of COVID-19 on emerging stock markets. *Finance Research Letters*, *36*, 101691. https://doi.org/10.1016/j.frl.2020.101691

Zhao, X., Wen, J., Zou, X., Wang, Q., & Chang, C. (2023). Strategies for the sustainable development of China in the post-epidemic era. *Sustainable Development*, *31*(1), 426–438. https://doi.org/10.1002/sd.2401

Zulfia, B., Dwiputri, I. N., Soesilowati, E., & Silva, S. D. (2025). *Navigating sustainability: Understanding the linkages between inclusive economic growth, institutional quality, and environmental degradation in BRICS Plus countries*.

Zulfia, B., Soesilowati, E., & Dwiputri, I. N. (2025). Heterogeneity of Inclusive Green Growth and Institutions: Spatial Evidence from BRICS Plus. *JEJAK*, *18*(2). https://doi.org/10.15294/jejak.v18i2.34203