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INSTITUTIONAL GOVERNANCE FOR REDUCING REGIONAL INDUSTRIAL DISPARITIES: AN EMPIRICAL LEGAL APPROACH

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ABSTRACT

Regional industrial productivity disparities remain a significant challenge to Indonesia's efforts to achieve balanced economic transformation. This study examines the structural factors underlying productivity differences between Western and Eastern Indonesia, evaluates the legal and regulatory frameworks governing regional industrial development, and assesses the implementation of policies aimed at reducing regional disparities. It employs a mixed-methods approach with qualitative socio-legal analysis. The legal analysis examines relevant legislation, institutional arrangements, and policy instruments governing industrial development, investment, regional autonomy, and intergovernmental coordination. Qualitative evidence from focus group discussions further explores the relationship between regulatory provisions, institutional capacity, and policy implementation. The study connects empirical evidence of industrial productivity disparities with the effectiveness of existing regulatory and institutional arrangements. It emphasizes the need to strengthen regulatory coherence, intergovernmental coordination, regional institutional capacity, and targeted policy interventions. Integrating productivity-oriented economic policies with responsive legal and institutional governance is essential to addressing structural barriers and promoting more balanced industrial development between Western and Eastern Indonesia.

1. Introduction

Industrial development is a vital instrument for economic transformation, productivity enhancement, and national competitiveness. In Indonesia, this agenda is closely associated with the Indonesia 2045 vision and the need to avoid prolonged middle-income growth stagnation. Achieving these objectives, however, requires more than increased investment and production capacity. It also depends on a coherent legal, institutional, and policy framework that provides regulatory certainty and supports economic activity. Legal and institutional reforms shape relations between government and economic actors, improve regulatory effectiveness, and influence development outcomes.[1] Accordingly, economic transformation should be understood not merely as a change in production structures but also as a process shaped by policy choices and institutional capacity.[2]

Structural transformation involves reallocating labor and resources from relatively low-productivity activities toward higher-productivity sectors, particularly manufacturing and modern services. This process encompasses changes in sectoral composition, productivity improvements, and the development of higher value-added activities.[3] Its success depends on investment, technological advancement, workforce capacity, and the institutional environment. Although foreign investment can support capital formation and technology transfer, its contribution depends on the economic and institutional conditions of the host country.[4] Consequently, industrial development must be considered alongside the legal arrangements governing investment, licensing, resource utilization, and

[1] R. D. T. K. Wardhono, Dian Puji Nugraha Simatupang, and Nadhia Shalehanti., Legal reforms in Indonesia's financial sector on institutional relations between Bank Indonesia and the government, *Hasanuddin Law Review*, Vol.11, no.1, 2025, page.57. See too, Abdul Atsar., Implikasi Pembaharuan Hukum Paten yang Berdasarkan Negara Hukum Pancasila terhadap Pembangunan Ekonomi di Indonesia, *Jurnal Yuridis*, Vol.10, no.2, 2023, page.23.

[2] Fardhal Virgiawan Ramadhan., Transformasi ekonomi digital Indonesia dalam mewujudkan Indonesia Emas 2045: Pemikiran Prof. Nurcholish Madjid, *Jurnal Ilmiah Ekonomi Islam*, Vol.10, no.1, 2024, page.1. See too, Gema Bangsawan., Kebijakan akselerasi transformasi digital di Indonesia: Peluang dan tantangan untuk pengembangan ekonomi kreatif, *Jurnal Studi Kebijakan Publik*, Vol.2, no.1, 2023, page.27.

[3] Banji Oyelaran-Oyeyinka and Kaushalesh Lal., *Structural Transformation and Economic Development: Cross Regional Analysis of Industrialization and Urbanization*, Milton Park, Taylor & Francis, 2016, page.121. See too, Wawan Rusiawan, Prijono Tjiptoherijanto, Emirhadi Suganda, and Linda Darmajanti., Assessment of green total factor productivity impact on sustainable Indonesia productivity growth, *Procedia Environmental Sciences*, Vol.28, no.2, 2015, page.493.

[4] Ezo Emako, Seid Nuru, and Mesfin Menza., The effect of foreign direct investment on economic growth in developing countries, *Transnational Corporations Review*, Vol.14, no.4, 2022, page.382. See too, Agussalim, Nursini, Sultan Suhab, Randi Kurniawan, Salman Samir, and Tawakkal., The path to poverty reduction: How do economic growth and fiscal policy influence poverty through inequality in Indonesia?, *Economies*, Vol.12, no.12, 2024, page.316; V. O. Shevchuk, M. M. Blikhar, I. I. Komarnytska, and N. M. Tataryn., Rule of law and economic growth, *Financial and Credit Activity: Problems of Theory and Practice*, Vol.1, no.32, 2020, page.278.

central–regional government relations.[5]

In Indonesia, structural transformation is complicated by disparities in industrial productivity between western and eastern regions. Differences in infrastructure, investment access, human resources, connectivity, and economic structures contribute to the uneven distribution of industrial activities and value-added production. While industrial development remains concentrated in western Indonesia, many eastern regions face limitations in expanding manufacturing and higher-value economic activities. These differences indicate that national economic growth does not necessarily produce convergence in regional industrial capacity. Previous studies have demonstrated that disparities in regional resources and institutional capacities influence local governments' ability to promote economic activities and provide essential infrastructure.[6] Thus, industrial productivity disparities represent not only an economic challenge but also a legal and institutional governance issue.

Regional industrial development is governed by an interconnected regulatory framework covering regional autonomy, industrial policy, investment, spatial planning, infrastructure, and special economic zones. These legal instruments establish the distribution of governmental authority, licensing mechanisms, and institutional responsibilities for creating conditions conducive to industrial development. Nevertheless, balancing regional autonomy with national coordination remains challenging. The evolution of decentralization has exposed tensions between local government authority, central government oversight, and development policy consistency.[7] Fragmented authority and unequal institutional capacities further complicate regional development planning and implementation.[8] Regulatory quality is equally important, as overlapping rules, complex

[5] Victor Imanuel W. Nalle and Martika Dini Syaputri., Deregulation and debureaucratisation through omnibus legislation: Developmentalist rationality and delegated lawmaking in Indonesia, *The Theory and Practice of Legislation*, Vol.12, no.2, 2026, page.1.

[6] Triarko Nurlambang., The effectiveness of decentralization in Indonesia: A case-study of the development of a marginal area by local authorities, *Revue Roumaine de Géographie*, Vol.62, no.2, 2018, page.240. See too, Bangkit A. Wiryawan and Christian Otchia., The legacy of the reformasi: The role of local government spending on industrial development in a decentralized Indonesia, *Journal of Economic Structures*, Vol.11, no.1, 2022, page.1; Simon Saimima, Andy Fefta Wijaya, Endah Setyowati, Benny Hutahayan., Legal Governance of Sustainable Government for Achieving the Sustainable Development Goals: A Bibliometric Analysis, *Jurnal Hukum Unissula,* Vol.42, no, 3, 2026, page.726; Eliyah Dwi Setyo Arti, Sukendi Sukendi, Yusmarini Yusmarini, Nurul Huda., Environmental Governance and Regulatory Challenges in Organic Waste Management Through Community Participation in Urban Indonesia, *Jurnal Hukum Unissula,* Vol.42, no, 3, 2026, page.840.

[7] Susi Dwi Harijanti., Regional government in Indonesia, In *Routledge Handbook of Indonesian Law, Milton Park, Routledge*, 2026, page.112. See too, Ismet Fanany., The first year of local autonomy: The case of West Sumatra, In *Autonomy & Disintegration Indonesia*, Milton Park, Routledge, 2012, page.177; D. Ajeng Nugrahaning, R. Frigate, S. Elin Diyah, and Mega Ulimaz., Analysis of factors that determine investment attractiveness in Balikpapan City, In *IOP Conference Series: Earth and Environmental Science*, vol.1186, Bristol, IOP Publishing, 2023, page.012022.

[8] Tommy Firman., Potential impacts of Indonesia's fiscal decentralisation reform on urban and regional development: Towards a new pattern of spatial disparity, *Space and Polity*, Vol.7, no.3, 2003, page.247.

administrative procedures, and weak intergovernmental coordination may generate uncertainty for businesses and constrain investment. These challenges highlight the importance of regulatory harmonization and effective regional legal governance.[9]

The government has introduced various instruments to address regional development disparities, including fiscal decentralization, intergovernmental transfers, special autonomy funding, industrial estate development, infrastructure investment, and regional economic cooperation. Fiscal decentralization provides local governments with opportunities to formulate development priorities according to regional characteristics and needs.[10] Fiscal transfers and special funding mechanisms are also intended to strengthen the development capacity of regions facing resource limitations.[11] Meanwhile, industrial growth centers seek to distribute economic activities beyond established development centers.[12] In eastern Indonesia, the Brunei Darussalam-Indonesia-Malaysia-Philippines East ASEAN Growth Area (BIMP-EAGA) represents an additional framework for improving connectivity and expanding regional economic opportunities.[13]

Despite these initiatives, regional disparities persist. Unequal access to electricity, information technology, and supporting infrastructure continues to influence production capacity and economic connectivity.[14] Similarly, fiscal decentralization and intergovernmental transfers do not automatically generate equivalent development outcomes because local governments differ in their capacity to plan,

[9] Anggita Yudanti and Wicipto Setiadi., Problematika pembentukan regulasi Indonesia dalam perencanaan pembentukan regulasi dengan perencanaan pembangunan daerah, *Volksgeist: Jurnal Ilmu Hukum dan Konstitusi*, Vol.12, no.5, 2022, page.27.

[10] Tommy Firman., Potential impacts of Indonesia's fiscal decentralisation reform on urban and regional development: Towards a new pattern of spatial disparity, *Space and Polity*, Vol.7, no.3, 2003, page.242. See too, Tessa Talitha, Tommy Firman, and Delik Hudalah., Welcoming two decades of decentralization in Indonesia: A regional development perspective, *Territory, Politics, Governance*, Vol.8, no.5, 2020, page.690.

[11] Muhammad Afdha Alif Almughni, Totok Hendarto, and Arief Budiono., Special autonomy funds and regional economic convergence in Indonesia: Panel evidence from special autonomy areas, *Economy of Regions*, Vol.22, no.2, 2026, page.475. See too, Hariyanto, Surya Perdana, Mabarroh Azizah, Tedi Sudrajat, Muhammad Mutawalli Mukhlis, and Hajar Salamah Salsabila Hariz., Toward Welfare-Driven Regional Autonomy: Strengthening Public Services in Indonesia, *LITIGASI*, Vol.27, no.1, 2026, page.78.

[12] Dwi Budi Santoso., The impact of industrial development zones designation on the convergence of economic growth in East Java, *Applied Economics*, Vol.53, no.49, 2021, page.5731.

[13] Nur Ikfal Raharjo Sandy and Nuke Pudjiastuti Tri., Indonesia in the BIMP-EAGA: Assessing connectivity development in reducing inequality, *SUVANNABHUMI*, Vol.16, no.1, 2024, page.175.

[14] Dhandy Arisaktiwardhana and Iqbal Akbar., Reducing economic disparity in the outermost and border regions: Assessing barriers and opportunities in the electricity sector, In *E3S Web of Conferences*, vol.73, Les Ulis, EDP Sciences, 2018, page.01001. See too, Toha Saifudin, Citrawani Marthabakti, and Ezha Easyfa Wieldyanisa., Comparative study of conventional and spatial panel models in analyzing the information and communication technology development index, Statistics, *Optimization & Information Computing*, Vol.15, no.5, 2026, page.3539.

allocate, and implement development budgets.[15] These conditions demonstrate the need to distinguish between the existence of policy instruments, their legal foundations, and their actual implementation. Evaluating industrial development policies therefore requires examining whether regulatory and institutional arrangements effectively address the structural constraints experienced by different regions.

Although previous studies have examined structural transformation, sectoral productivity, decentralization, and regional inequality in Indonesia, the relationship between empirical industrial productivity, legal frameworks, and policy implementation remains insufficiently integrated. Economic studies frequently treat regulation and institutions as contextual factors, while legal analyses do not always connect regulatory design with empirically identified productivity constraints. Consequently, further examination is needed of how the distribution of governmental authority, regulatory quality, institutional coordination, and policy instruments influence regional industrial development. Existing research indicates that development outcomes are closely associated with institutional arrangements and local implementation capacity.[16] However, these relationships require further investigation through empirical evidence on regional industrial productivity and structural constraints.

To address this gap, this study integrates regional productivity analysis using Total Factor Productivity (TFP) and Growth Diagnostics with legal and policy analysis of industrial development. TFP decomposition identifies productivity patterns and differences between western and eastern regions, while Growth Diagnostics examines the structural constraints affecting industrial competitiveness in selected provinces. These empirical results provide the basis for examining the legal and regulatory frameworks governing regional industrial development, particularly the distribution of authority, institutional coordination, and regulatory instruments concerning investment and infrastructure. The study further evaluates specific policies implemented to reduce regional disparities and assesses their effectiveness in addressing the identified structural constraints.

Accordingly, this study addresses three research questions: (1) What are the patterns and principal factors underlying industrial productivity disparities between western and eastern Indonesia? (2) How do Indonesia's legal and regulatory frameworks govern regional industrial development and address these disparities? (3) What specific policies have been implemented to reduce regional industrial

[15] Adiwan Aritenang and Jung Won Sonn., The effect of decentralization and free trade agreements on regional disparity in a developing economy: The case of Indonesia, 1993–2005, *International Journal of Urban Sciences*, Vol.22, no.4, 2018, page.546. See too, Matondang Elsa Siburian., Fiscal decentralization and regional income inequality: Evidence from Indonesia, *Applied Economics Letters*, Vol.27, no.17, 2020, page.1383.

[16] Bangkit A. Wiryawan and Christian Otchia., The legacy of the reformasi: The role of local government spending on industrial development in a decentralized Indonesia, *Journal of Economic Structures*, Vol.11, no.1, 2022, page.3. See too, Susi Dwi Harijanti., Regional government in Indonesia, In *Routledge Handbook of Indonesian Law, Milton Park, Routledge*, 2026, page.112; Rizki Afri Mulia and Rianda Prima Putri., Pengaruh tingkat kemiskinan dan produk domestik regional bruto terhadap kesejahteraan masyarakat, *Jurnal Ilmiah Ekotrans & Erudisi*, Vol.2, no.1, 2022, page.22.

disparities, and to what extent have they addressed the structural constraints identified through empirical analysis? By connecting empirical productivity evidence with legal and institutional evaluation, this study contributes to understanding how regulatory frameworks and institutional governance shape industrial development and regional equity, while providing policy implications for more balanced industrial transformation.

2. Research Methods

This study employs a mixed-methods approach with a sequential explanatory design, combining quantitative analysis, to identify regional disparities in industrial productivity, with a qualitative, socio-legal perspective to evaluate regulatory frameworks and policy implementation. This approach bridges empirical measurements of industrial productivity gaps between Western and Eastern Indonesia with an analysis of the legal frameworks and the implementation of regional industrial development policies. The study also adopts an ex-ante Policy Impact Assessment (PIA) framework to identify potential policy interventions, grounded in empirical evidence and an evaluation of regulatory and institutional barriers.

The quantitative analysis utilizes secondary data from Statistics Indonesia (BPS) and relevant ministries/agencies, covering 34 provinces over the 2010–2021 period. Six provinces were selected via stratified sampling, three from Western Indonesia and three from Eastern Indonesia. This selection was based on the gap between the projected growth trajectory for the industrial sector's contribution by 2045 and the actual contribution of the industrial sector in each province as of 2021. The quantitative analysis is conducted in three stages. First, Total Factor Productivity (TFP) is decomposed using a Growth Accounting Model based on a Cobb-Douglas production function to measure the contributions of capital, labor, and productivity to industrial growth. Second, Growth Diagnostics and benchmarking are applied to identify "binding constraints" affecting industrial productivity, encompassing factors such as geography, financing, infrastructure, labor, education, health, fiscal conditions, regulatory and institutional frameworks, and economic competitiveness. Third, the results of this analysis are used to identify differences in structural barriers between the two regions. To address the second research question, a normative legal analysis was conducted on the laws, regulations, and policies governing regional industrial development, decentralization, investment, infrastructure, and the division of authority between the central and regional governments. The analysis encompasses the identification of legal bases, the distribution of powers, intervention instruments, coordination mechanisms, and institutional responsibilities. A statute approach and a conceptual approach were employed to assess the consistency of the regulations and their alignment with the need for an equitable distribution of industrial productivity.

Furthermore, a qualitative approach was employed to deepen the benchmarking results through a Focus Group Discussion (FGD) involving at least 10 participants representing local governments, technical agencies, academia, industry players,

MSMEs, and Bank Indonesia. Data from the FGD were analyzed thematically to validate empirical obstacles and identify gaps between legal provisions, policy implementation, and regional needs. The overall findings were then synthesized by mapping binding constraints, policy objectives, and regulatory or institutional instruments to evaluate the extent to which the implemented policies have addressed structural barriers, and to formulate recommendations for improving the governance of regional industrial development.

3. Results and Discussion

3.1. Regional Industrial Productivity and Structural Disparities

Industrial development disparities between western and eastern Indonesia are reflected in differences in the industrial sector's contribution to regional economies and the gaps between actual industrial shares and the targets set for 2045. The analysis covers 34 provinces, comprising 16 provinces in western Indonesia and 18 in eastern Indonesia. Six provinces were selected based on the largest differences between their 2021 industrial shares and the projected growth trajectory toward the 2045 target, with three provinces representing each region. The western provinces are the Riau Islands (16.84%), Bangka Belitung Islands (7.94%), and North Sumatra (6.94%). The eastern provinces are East Kalimantan (29.10%), Central Sulawesi (22.42%), and West Kalimantan (20.45%). These differences indicate that the selected eastern provinces face relatively larger gaps in achieving the targeted expansion of industrial activity, although their economic structures and development conditions vary.

Total Factor Productivity (TFP) analysis was employed to examine the contributions of capital, labor, and production efficiency to regional economic growth during 2011–2021. The results reveal substantial variations across the six provinces. Capital remains the dominant contributor in most cases, while labor and TFP contributions are considerably less consistent. This suggests that economic expansion has not necessarily been accompanied by proportional improvements in production efficiency. Consequently, differences in regional growth reflect not only the availability of production inputs but also the institutional and productive capacity to utilize those inputs effectively.

In western Indonesia, North Sumatra's economy is supported primarily by agriculture, forestry and fisheries; manufacturing; trade; and construction, which collectively contributed 73.93% of provincial GDP in 2021. Manufacturing accounted for 19.52%. TFP was the second-largest contributor to economic growth after capital, although its growth was negative in 2012, 2018, 2019, and 2021, with an average growth rate of only 0.08%. Meanwhile, weighted capital growth contributed an average of 110.66% to economic growth. These results indicate a strong dependence on capital accumulation, while improvements in production efficiency remain unstable.

The Riau Islands present a different industrial structure, with manufacturing contributing 42.03% of provincial GDP in 2021, followed by construction (18.75%) and mining and quarrying (13.16%). Despite its relatively strong manufacturing base, economic growth remained heavily dependent on capital, which contributed an average of 98.20% during 2011–2021. TFP and labor contributed 1.25% and

0.55%, respectively, while average TFP growth was positive at 0.38%. This indicates some improvement in production efficiency, although industrial expansion remains predominantly capital-driven. In comparison, manufacturing in the Bangka Belitung Islands contributed 20.86% of provincial GDP, slightly exceeding agriculture, forestry, and fisheries (19.66%). Its TFP growth averaged -0.11%, while capital, labor, and TFP contributed 128.03%, 0.55%, and -28.58%, respectively. These results indicate that increased production inputs have not consistently translated into proportional output improvements.

In eastern Indonesia, East Kalimantan's economy remains strongly influenced by mining and quarrying, which accounted for 45.11% of provincial GDP. Despite economic contractions in 2015, 2017, and 2020, capital remained the principal growth contributor, with average growth of 2.89%, while labor and TFP contributions were relatively limited. Negative TFP growth in 2019 and 2021 further indicates that resource-based economic expansion has not consistently generated improvements in production efficiency. This highlights the importance of strengthening industrial diversification and developing higher value-added activities beyond extractive industries.

Central Sulawesi demonstrates a stronger manufacturing orientation, with the sector contributing 33.83% of provincial GDP. Nevertheless, capital remained the dominant growth contributor, averaging 116.81%, while labor and TFP contributions were relatively small. This suggests that manufacturing expansion and investment have not automatically translated into comparable productivity improvements. West Kalimantan, by contrast, remains supported primarily by agriculture, forestry, and fisheries (23.94%), while manufacturing contributed 16.09%. Following an economic contraction in 2020, the province recorded growth of 4.80% in 2021. Capital contributed an average of 84.75%, while TFP accounted for 15.16%, representing the second-largest contribution. Although this indicates relatively stronger productivity performance, the comparatively limited manufacturing share suggests that industrial structural transformation remains an important development challenge.

Overall, the TFP results demonstrate that industrial productivity disparities cannot be explained solely by differences in manufacturing contributions to regional GDP. The Riau Islands and Central Sulawesi have relatively substantial manufacturing sectors but remain heavily dependent on capital accumulation. Conversely, West Kalimantan records a comparatively stronger TFP contribution despite its smaller manufacturing share. North Sumatra and the Bangka Belitung Islands also illustrate that capital expansion does not necessarily produce corresponding efficiency gains. These differences suggest that industrial development requires not only investment expansion but also improvements in labor capacity, production efficiency, and the institutional conditions supporting industrial activity.



Figure 1. Labor and Capital Growth of (a) North Sumatra, (b) Riau Islands and Bangka Belitung (2011-2021)



Figure 2. Labor and Capital Growth of (a) East Kalimantan, (b) Central Sulawesi and (c) West Kalimantan Province (2011-2021).

The subsequent Growth Diagnostics analysis identifies the structural constraints affecting industrial and regional economic development. In western Indonesia, regulatory and institutional factors emerge as major constraints in North Sumatra and the Riau Islands. In North Sumatra, additional barriers include limited credit utilization, inadequate road and sanitation infrastructure, business concentration among MSMEs, and relatively high licensing costs. In the Riau Islands, constraints include unemployment, productivity limitations across agriculture, industry, and

services, shortages of highly educated workers, and health-related indicators.[17] In the Bangka Belitung Islands, educational attainment and participation at primary and secondary levels constitute major constraints, alongside investment attractiveness, export diversification, business scale, and access to banking and investment credit.[18]

In eastern Indonesia, the constraints reflect a combination of institutional, infrastructural, financial, educational, and competitiveness challenges. In East Kalimantan, regulatory and institutional constraints are associated with regional competitiveness indicators, while additional barriers include limited credit utilization, healthcare facilities and personnel, road quality, and access to clean water. Central Sulawesi faces constraints involving the limited scale of medium and large enterprises, licensing costs and processing time, road quality, basic infrastructure, and access to telecommunications and internet services. Financial constraints are also evident in the limited distribution of banking, investment, and service-sector credit. In West Kalimantan, education and infrastructure are the principal constraints, reflected in human development indicators, average years of schooling, road quality, and access to electricity, sanitation, clean water, internet, and telecommunications.[19] Financing and competitiveness challenges additionally involve limited working-capital credit, restricted manufacturing and trade financing, high licensing costs, and insufficient export diversification.
These findings demonstrate that industrial development constraints vary across provinces, although several recurring issues are evident, particularly regulatory and institutional quality, licensing costs, infrastructure limitations, financing

[17] M. Ferdi Septianda., Strategi pengelolaan sumber daya alam sebagai pondasi transformasi ekonomi yang inklusif dan berkelanjutan di Provinsi Kepulauan Riau, *Jurnal Archipelago*, Vol.3, no.2, 2025, page.17. See too, Arthur M. Okun, Nancy H. Teeters, Warren Smith, and R. A. Gordon., The full employment surplus revisited, *Brookings Papers on Economic Activity*, Vol.1970, no.1, 1970, page.77.

[18] Haiqal Riski Ramadhan, Darminto Hartono Paulus, and Giovanni Marcello., Prohibition of monopolistic practices in business trials in Indonesia: Reforming on business competition supervisory commission, *Journal of Law and Legal Reform*, Vol.4, no.2, 2023, page.163. See too, Isabel Almudi, Francisco Fatas-Villafranca, Gloria Jarne, and Julio Sanchez-Choliz., An evolutionary growth model with banking activity, *Metroeconomica*, Vol.71, no.2, 2020, page.392; Mark T. Berger., Old state and new empire in Indonesia: Debating the rise and decline of Suharto's New Order, *Third World Quarterly*, Vol.18, no.2, 1997, page.321; Paripurna P. Sugarda and Muhammad Rifky Wicaksono., Strengthening Indonesia's economic resilience through regulatory reforms in banking, investment and competition law, *Journal of Economic & Management Perspectives*, Vol.11, no.3, 2017, page.1093; Harold A. Crouch., *Political Reform in Indonesia after Soeharto*, Singapore, Institute of Southeast Asian Studies, 2010, page.82.

[19] Iwan Kurniawan, Suwito Eko Pramono, Arief Yulianto, and Ali Formen., Mainstreaming law and human rights education in Indonesia: How the national training institute can drive legal and policy reform, *Journal of Law and Legal Reform*, Vol.5, no.3, 2024, page.1505. See too, Setiyo Utomo., The digital age and human rights protection in Indonesia: Legal framework, challenges, and reform directions, *Yustisia*, Vol.14, no.2, 2025, page.225; Widya Sari, Andi Muhammad Rifki, Mila Karmila, Fajri Dwiyama, and Muhammad Bachtiar Aziz., Analisis kebijakan pendidikan terkait implementasi pembelajaran jarak jauh pada masa darurat COVID-19, *Jurnal Mappesona*, Vol.3, no.2, 2020, page.19.

access, and human resource capacity. This variation has important implications for legal and institutional governance because uniform policy interventions may not adequately address different regional conditions. Provinces with established manufacturing bases require stronger productivity, efficiency, and industrial diversification, whereas regions dependent on agriculture or extractive activities require institutional and regulatory support for manufacturing development and value addition. Accordingly, the combined TFP and Growth Diagnostics results provide an empirical foundation for evaluating how legal frameworks, governmental authority, institutional coordination, and policy instruments can respond to region-specific barriers to industrial development.[20]

3.2. Legal and Regulatory Frameworks for Regional Industrial Development

Indonesia's legal framework for regional industrial development encompasses national industrial policy, regional autonomy, investment regulation, spatial planning, and geographically targeted development arrangements. These instruments establish the legal basis for industrial expansion while distributing responsibilities between central and regional governments.[21] However, the existence of regulatory frameworks does not necessarily ensure an equitable distribution of industrial investment, infrastructure, and productive capacity. The disparities identified in the six selected provinces therefore need to be examined in relation to the institutional arrangements and implementation capacities underlying these regulations.

The principal statutory foundation is Law Number 3 of 2014 on Industry, as amended by Law Number 6 of 2023. This legislation positions industrial development as an instrument for strengthening the national economic structure and promoting a more balanced distribution of industrial activities. It provides a legal basis for expanding industrial development beyond established production centres and encouraging regions to develop industries according to their resources and economic potential.[22] This framework is particularly relevant to provinces

[20] Abbas Syahrizal and Ramzi Murziqin., Sharia-based regional regulations in the Indonesian national law system, *Jurnal Ilmiah Peuradeun*, Vol.9, no.3, 2021, page.529. See too, Tommy Firman., Potential impacts of Indonesia's fiscal decentralisation reform on urban and regional development: Towards a new pattern of spatial disparity, *Space and Polity*, Vol.7, no.3, 2003, page.245; Susi Dwi Harijanti., Regional government in Indonesia, In *Routledge Handbook of Indonesian Law, Milton Park, Routledge*, 2026, page.114; N. Sirait, H. Hendra, and L. Nesti., A computerized study of factors of economic growth disparity in Indonesia, In *Journal of Physics: Conference Series*, vol.1469, Bristol, IOP Publishing, 2020, page.012051; I. Gusti Ngurah Parikesit Widiatedja., Spatial planning law in Indonesia, In *Routledge Handbook of Indonesian Law*, Milton Park, Routledge, 2026, page.89; Anggita Yudanti and Wicipto Setiadi., Problematika pembentukan regulasi Indonesia dalam perencanaan pembentukan regulasi dengan perencanaan pembangunan daerah, *Volksgeist: Jurnal Ilmu Hukum dan Konstitusi*, Vol.12, no.5, 2022, page.27.

[21] M. Indra., Indonesia's plan for concurrent regional expansion, In *IOP Conference Series: Earth and Environmental Science*, vol.1181, Bristol, IOP Publishing, 2023, page.012020.

[22] Wardah Yuspin and Nunik Nurhayati., The establishment of participatory regional regulations based on local wisdom, *Humanities & Social Sciences Reviews*, Vol.7, no.3, 2019, page.92. See too, Iwan J. Azis., *Periphery and Small Ones Matter: Interplay of Policy and Social Capital*, Berlin, Springer Nature, 2022, page.22.

dependent on primary commodities or characterized by limited downstream processing capacity, including Bangka Belitung, East Kalimantan, and the Riau Islands. Nevertheless, achieving these objectives requires translating statutory commitments into regional industrial planning, infrastructure provision, investment facilitation, and local industrial capacity development.[23]

A more specific regulatory instrument is Government Regulation Number 20 of 2024 on Industrial Zoning (Perwilayahan Industri), which replaced Government Regulation Number 142 of 2015 on Industrial Estates. This regulation provides a framework for distributing industrial activities through industrial zoning and the development of industrial estates. Its significance lies in recognizing that industrial development requires spatial and infrastructural coordination rather than relying exclusively on investment incentives or natural resource availability. Industrial locations must be connected to transportation networks, energy and water supplies, logistics facilities, labour markets, and supporting services. This framework is relevant to the infrastructure constraints identified in the Riau Islands, Bangka Belitung, and North Sumatra, where port capacity, inter-island connectivity, and industrial estate facilities influence production and distribution costs.[24]

The spatial dimension is further governed by Law Number 26 of 2007 on Spatial Planning, as amended by the Job Creation legislation. This law establishes governmental responsibilities for preparing, utilizing, and controlling spatial plans across administrative levels. It provides a legal basis for coordinating land use and infrastructure development, ensuring that industrial locations are aligned with transportation corridors, settlements, and environmental considerations. However, spatial planning may also generate regulatory uncertainty when industrial investment requires land-use adjustments or coordination between central and regional development priorities. These challenges are relevant to the development of the Sei Mangkei Special Economic Zone and proposed industrial areas in Bangka Belitung.[25]

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[23] Government of Indonesia., *Law No. 3 of 2014 concerning Industry*, State Gazette of the Republic of Indonesia Year 2014 Number 4, 2014. See too, Triarko Nurlambang., The effectiveness of decentralization in Indonesia: A case-study of the development of a marginal area by local authorities, *Revue Roumaine de Géographie*, Vol.62, no.2, 2018, page.240; Dwi Budi Santoso., The impact of industrial development zones designation on the convergence of economic growth in East Java, *Applied Economics*, Vol.53, no.49, 2021, page.5731.

[24] Government of Indonesia., *Law No. 26 of 2007 concerning Spatial Planning*, State Gazette of the Republic of Indonesia Year 2007 Number 68, 2007. See too, Retno Mawarini Sukmariningsih., Some key issues in the cancellation of local regulations in Indonesia, *Journal of Legal, Ethical and Regulatory Issues*, Vol.22, no.3, 2019, page.1; John W. Creswell and J. David Creswell., *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, Thousand Oaks, Sage Publications, 2017, page.30.

[25] Government of Indonesia. *Government Regulation No. 20 of 2024 concerning Industrial Zoning*, 2024. See too, I. Gusti Ngurah Parikesit Widiatedja., Spatial planning law in Indonesia, In *Routledge Handbook of Indonesian Law*, Milton Park, Routledge, 2026, page.89; Anggita Yudanti and Wicipto Setiadi., Problematika pembentukan regulasi Indonesia dalam perencanaan

Regional autonomy constitutes another important dimension of industrial governance. Law Number 23 of 2014 on Regional Government, as amended, regulates the allocation of governmental affairs between central and regional authorities. This arrangement provides regional governments with responsibilities for implementing development priorities and certain industrial affairs, while the central government retains strategic regulatory and coordinating functions. Although this division is intended to connect national industrial priorities with regional needs, industrial development frequently involves overlapping responsibilities concerning licensing, infrastructure, investment, natural resources, and sectoral regulation. Consequently, the effectiveness of regional industrial policy depends on the clarity of authority and coordination between different levels of government.[26]

The experience of decentralization also demonstrates that transferring governmental authority alone does not guarantee regional convergence. Differences in fiscal resources, institutional quality, infrastructure, and administrative capacity influence the ability of local governments to attract investment and implement development policies. Previous studies have reported mixed relationships between decentralization and regional disparities.[27] Aritenang's spatial analysis identified evidence of regional convergence during the decentralization period, whereas Aritenang and Sonn found that decentralization slowed convergence in their analysis of regional disparities and firm-level development. These differences suggest that decentralization outcomes depend on the interaction between governmental authority, fiscal capacity, and institutional effectiveness.[28]

pembentukan regulasi dengan perencanaan pembangunan daerah, *Volksgeist: Jurnal Ilmu Hukum dan Konstitusi*, Vol.12, no.5, 2022, page.29; Khalid Eltayeb Elfaki, Rossanto Dwi Handoyo, and Kabiru Hannafi Ibrahim., The impact of industrialization, trade openness, financial development, and energy consumption on economic growth in Indonesia, *Economies*, Vol.9, no.4, 2021, page.174; Pierre Van Der Eng., Accounting for Indonesia's economic growth: Recent past and near future, In *Seminar on World Economic Performance: Past, Present and Future—Long Term Performance and Prospects of Australia and Major Asian Economies*, University of Queensland, Brisbane, 2006, page.5.

[26] Abbas Syahrizal and Ramzi Murziqin., Sharia-based regional regulations in the Indonesian national law system, *Jurnal Ilmiah Peuradeun*, Vol.9, no.3, 2021, page.530. See too, Susi Dwi Harijanti., Regional government in Indonesia, In *Routledge Handbook of Indonesian Law, Milton Park, Routledge*, 2026, page.115; Triarko Nurlambang., The effectiveness of decentralization in Indonesia: A case-study of the development of a marginal area by local authorities, *Revue Roumaine de Géographie*, Vol.62, no.2, 2018, page.245; Government of Indonesia., *Law No. 23 of 2014 concerning Regional Government*, State Gazette of the Republic of Indonesia Year 2014 Number 244, 2014.

[27] Riyana Miranti., Understanding the relationships between development factors and regional poverty: What have we learned from Indonesia?, *Journal of Poverty*, Vol.21, no.6, 2017, page.483. See too, Susanto Basu and John G. Fernald., What do we know (and not know) about potential output?, Federal Reserve Bank of St. *Louis Review*, Vol.91, no.3, 2009, page.234; Andrew Rosser., The political economy of institutional reform in Indonesia: The case of intellectual property law, In *Law, Capitalism and Power in Asia*, Milton Park, Routledge, 2006, page.80.

[28] Adiwan F. Aritenang and Aryani N. Chandramidi., The spatial effects of fiscal decentralization on regional convergence: The case of regions in Indonesia, *GeoJournal*, Vol.88, no.2, 2023, page.2011. See too, Adiwan Aritenang and Jung Won Sonn., The effect of decentralization and

Fiscal decentralization provides an additional mechanism for supporting regional industrial development through intergovernmental transfers and regional expenditure authority. These arrangements are intended to enable local governments to finance infrastructure and development programmes according to regional needs. However, their effectiveness depends on expenditure quality, project preparation capacity, and coordination with national development priorities. Fiscal transfers may expand development opportunities without necessarily reducing industrial productivity disparities, particularly where regions continue to face limitations in skilled labour, industrial technology, and supporting infrastructure.[29]

Investment regulation and business licensing constitute further legal instruments for facilitating industrial development. Law Number 25 of 2007 on Investment, as amended by Law Number 6 of 2023, establishes the framework for domestic and foreign investment, including investor treatment and investment facilities. The Job Creation Law further promotes administrative simplification and improvements to the investment environment. Its implementation is currently governed by Government Regulation Number 28 of 2025, which replaced Government Regulation Number 5 of 2021. Through the Online Single Submission (OSS) system, the framework establishes risk-based licensing requirements, standards, supervision, and mechanisms for addressing administrative obstacles. This regulatory development is relevant to the licensing constraints identified in North Sumatra, particularly the integration of online procedures and administrative data. It also demonstrates that regulatory simplification requires effective system integration and coordination among relevant authorities.[30]

free trade agreements on regional disparity in a developing economy: The case of Indonesia, 1993–2005, *International Journal of Urban Sciences*, Vol.22, no.4, 2018, page.548; Tommy Firman., Potential impacts of Indonesia's fiscal decentralisation reform on urban and regional development: Towards a new pattern of spatial disparity, *Space and Polity*, Vol.7, no.3, 2003, page.247; N. Sirait, H. Hendra, and L. Nesti., A computerized study of factors of economic growth disparity in Indonesia, In *Journal of Physics: Conference Series*, vol.1469, Bristol, IOP Publishing, 2020, page.012054; Bangkit A. Wiryawan and Christian Otchia., The legacy of the reformasi: The role of local government spending on industrial development in a decentralized Indonesia, *Journal of Economic Structures*, Vol.11, no.1, 2022, page.6.

[29] Ananda CF, AM Fazaalloh, and TJ Soewardi., Economic Growth and Inter-Regional Disparity: An Economic Policy Debate, *Pertanika Journal of Social Sciences & Humanities*, Vol.24, no.2, 2016, page.221. See too, Adiwan F. Aritenang and Aryani N. Chandramidi., The spatial effects of fiscal decentralization on regional convergence: The case of regions in Indonesia, *GeoJournal*, Vol.88, no.2, 2023, page.2015; Adiwan Aritenang and Jung Won Sonn., The effect of decentralization and free trade agreements on regional disparity in a developing economy: The case of Indonesia, 1993–2005, *International Journal of Urban Sciences*, Vol.22, no.4, 2018, page.549; Tommy Firman., Potential impacts of Indonesia's fiscal decentralisation reform on urban and regional development: Towards a new pattern of spatial disparity, *Space and Polity*, Vol.7, no.3, 2003, page.247; Matondang Elsa Siburian., Fiscal decentralization and regional income inequality: Evidence from Indonesia, *Applied Economics Letters*, Vol.27, no.17, 2020, page.1383;

[30] Government of Indonesia., *Law No. 25 of 2007 concerning Investment*, State Gazette of the Republic of Indonesia Year 2007 Number 67, 2007. See too, Government of Indonesia., *Law No. 6 of 2023 concerning the Stipulation of Government Regulation in Lieu of Law No. 2 of 2022 on*

Special Economic Zones (SEZs) provide a geographically targeted instrument for accelerating investment and regional development. Law Number 39 of 2009 on Special Economic Zones, as amended by Law Number 6 of 2023, establishes the legal basis for designated areas with specific economic functions, institutional arrangements, and investment facilities. The Sei Mangkei SEZ in North Sumatra illustrates the application of this framework to industrial transformation. Nevertheless, FGD results indicate that its designation has not automatically resolved constraints involving gas supply, transportation, industrial estate infrastructure, and qualified labour. The distance between Sei Mangkei and Belawan Port, together with the suboptimal operation of the railway connection, illustrates the importance of integrating industrial zones with wider logistics networks. Therefore, SEZ effectiveness depends not only on legal designation but also on infrastructure provision and institutional coordination.[31]

National and regional development policies provide an additional framework for addressing territorial disparities. Presidential Regulation Number 59 of 2017 on the Implementation of the Achievement of Sustainable Development Goals requires the integration of sustainable development objectives into national and regional planning. Although it does not specifically regulate industrial productivity disparities, it provides a broader policy basis for connecting economic development with social and regional objectives.[32] Similarly, Presidential Regulation Number 80 of 2019 establishes an accelerated development framework for designated areas in East Java, including Gresik–Bangkalan–Mojokerto–Surabaya–Sidoarjo–Lamongan, Bromo–Tengger–Semeru, and the Selingkar Wilis and Southern Cross areas. Rather than constituting a nationwide expansion of industrial centres, this regulation illustrates a geographically targeted approach to coordinating infrastructure, economic centres, and regional connectivity.[33]

Job Creation into Law, 2023; Government of Indonesia. *Government Regulation No. 28 of 2025 concerning the Implementation of Risk-Based Business Licensing*, 2025; Victor Imanuel W. Nalle and Martika Dini Syaputri., Deregulation and debureaucratisation through omnibus legislation: Developmentalist rationality and delegated lawmaking in Indonesia, *The Theory and Practice of Legislation*, Vol.12, no.2, 2026, page.7.

[31] Government of Indonesia., *Law No. 39 of 2009 concerning Special Economic Zones*, State Gazette of the Republic of Indonesia Year 2009 Number 147, 2009. See too, Muh Ali Masnun and Radhyca Nanda Pratama., Regulations harmonization of proposal and stipulation of special economic zone in Indonesia, *Law Reform*, Vol.16, no.2, 2020, page.198; Stephan Haggard and Lydia Tiede., The rule of law and economic growth: Where are we?, *World Development*, Vol.39, no.5, 2011, page.673; Dwi Rahmayani and F. Sugiyanto., Total factor productivity (TFP) sebagai kekuatan pertumbuhan ekonomi, In *Prosiding Seminar Nasional & Sidang Pleno ISEI*, vol.17, 2014, page.149.

[32] Government of Indonesia., *Presidential Regulation No. 59 of 2017 concerning the Implementation of the Achievement of Sustainable Development Goals*, 2017. See too, Hania Rahma, Akhmad Fauzi, Bambang Juanda, and Bambang Widjojanto., Development of a composite measure of regional sustainable development in Indonesia, *Sustainability*, Vol.11, no.20, 2019, page.5854; Riza Noer Arfani., The investment chapter of the Trans-Pacific Partnership and Indonesia, In *Emerging Global Trade Governance: Mega Free Trade Agreements and Implications for ASEAN*, 2018, page.33; Peraturan Presiden Republik Indonesia, and Republik Indonesia., Rencana Pembangunan Jangka Menengah Nasional, *Peratur Pres Republik Indones Nomor* 18, 2017.

[33] Government of Indonesia., *Presidential Regulation No. 80 of 2019 concerning the Acceleration of Economic Development in the Gresik–Bangkalan–Mojokerto–Surabaya–Sidoarjo–Lamongan*

Overall, Indonesia's regulatory framework provides a broad legal foundation for industrial development through industrial zoning, spatial planning, regional autonomy, investment facilitation, fiscal transfers, and geographically targeted programmes. However, its effectiveness in reducing regional disparities depends on regulatory coherence and implementation capacity. The selected provinces illustrate different implementation challenges. In the Riau Islands, these concern inter-island connectivity and fisheries processing; in Bangka Belitung, downstream technology, port infrastructure, human resources, and sectoral policy alignment; and in North Sumatra, licensing integration, energy access, industrial estate facilities, and logistics connectivity.[34] These differences demonstrate that regional industrial development requires more than comprehensive legislation. It also requires effective intergovernmental coordination, institutional capacity, and consistent implementation of supporting infrastructure and development policies.[35]

3.3. Implementation of Policies to Address Regional Industrial Disparities

Policies aimed at reducing industrial disparities across regions in Indonesia encompass fiscal decentralization, the development of industrial estates, investment facilitation, infrastructure construction, and regional economic

Area, Bromo–Tengger–Semeru Area, and Selingkar Wilis and Southern Cross Areas, 2019. See too, H. M. Pahrudin and Citra Darminto., The impact of local government policies on people's welfare in the regional autonomy era: A case study of Jambi City, Indonesia, *Kasetsart Journal of Social Sciences*, Vol.42, no.4, 2021, page.732; Syahril Sidiq., Interseksi hukum dan ekonomi: Analisis komprehensif terhadap dinamika regulasi dan dampaknya terhadap pertumbuhan ekonomi, *Muhammadiyah Law Review*, Vol.7, no.2, 2023, page.39; Zerlita Fahdha Pusdiktasari, Rahma Fitriani, and Eni Sumarminingsih., The optimality of East Java's economic equality policy implementation during COVID-19: Application of spatial outlier detection method, In *AIP Conference Proceedings*, vol.2903, New York, AIP Publishing LLC, 2023, page.090011

[34] Haris Azhar., The human rights struggle in Indonesia: International advances, domestic deadlocks, *SUR-Int'l J. on Hum Rts.*, Vol.11, no.2, 2014, page.227. See too, I. Made Subawa, Bagus Hermanto, Ida Ayu Mas Ratu, and Mariko Hattori., Observance of the legal choice for the settlement of Indonesia's past gross violations of human rights, *Yuridika*, Vol.39, no.2, 2024, page.231; Irene Istiningsih Hadiprayitno., Defensive enforcement: Human rights in Indonesia, *Human Rights Review*, Vol.11, no.3, 2010, page.373; M. Yulian Akbar, Hadi Warsono, Teguh Yuwono, Bangkit Aditya Wiryawan., Legal Governance for Extreme Poverty Reduction: Advancing Justice Through Participatory Public Policy, *Jurnal Hukum Unissula,* Vol.42, no, 2, 2026, page.532; Zulkifli Zulkifli, Almusawir Almusawir, Andi Tira., Communal Intellectual Property Rights and Creative Industry Development Through Integration Patterns, *Jurnal Hukum Unissula,* Vol.41, no, 3, 2026, page.624.

[35] Abbas Syahrizal and Ramzi Murziqin., Sharia-based regional regulations in the Indonesian national law system, *Jurnal Ilmiah Peuradeun*, Vol.9, no.3, 2021, page.532. See too, Adiwan F. Aritenang and Aryani N. Chandramidi., The spatial effects of fiscal decentralization on regional convergence: The case of regions in Indonesia, *GeoJournal*, Vol.88, no.2, 2023, page.2017; Adiwan Aritenang and Jung Won Sonn., The effect of decentralization and free trade agreements on regional disparity in a developing economy: The case of Indonesia, 1993–2005, *International Journal of Urban Sciences*, Vol.22, no.4, 2018, page.546; Abbas Syahrizal and Ramzi Murziqin., Sharia-based regional regulations in the Indonesian national law system, *Jurnal Ilmiah Peuradeun*, Vol.9, no.3, 2021, page.529.

cooperation. These instruments are intended to improve the investment climate and production capacity of regions with diverse economic characteristics. However, the mere existence of such policies does not automatically imply that productivity barriers have been overcome. Therefore, this analysis distinguishes between policies that already possess a legal and institutional foundation and proposed interventions derived from "Growth Diagnostics" results for the Riau Islands, Bangka Belitung Islands, and North Sumatra.[36]

Fiscal decentralization and regional autonomy serve as primary instruments for expanding development opportunities beyond established economic hubs. The devolution of authority and fiscal resources to local governments is intended to provide them with the latitude to determine development priorities, including infrastructure, transportation, and facilities that support industrial activities. Nevertheless, the impact of decentralization on equitable development has not been uniform. Variations in fiscal capacity, institutional quality, and the ability of local governments to manage public expenditure all influence the outcomes. Consequently, the success of decentralization should be evaluated not merely based on the division of authority, but also on the capacity of local governments to transform fiscal resources into productive investments and enhanced industrial capacity.[37]

The development of industrial estates serves as a more targeted instrument for broadening the distribution of production activities. Government Regulation Number 20 of 2024 concerning Industrial Zoning provides a framework for the development of industrial estates, based on the economic potential and connectivity requirements of each region. At the regional level, the Tanjung Ular and Suge industrial areas in the Bangka Belitung Islands, as well as the Sei Mangkei Special Economic Zone (SEZ) in North Sumatra, reflect efforts to promote investment and downstream industrialization through the development of specific zones. However, the legal designation of such areas does not guarantee their operational readiness. The availability of ports, transportation infrastructure, energy, water and waste treatment facilities, digital connectivity, and a competent workforce remains the determining factor in whether these areas can generate sustainable economic activity.[38]

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[36] Ricardo Hausmann, Dani Rodrik, and Andrés Velasco., Growth diagnostics, *The Washington Consensus Reconsidered: Towards a New Global Governance*, Vol.16, no.3, 2008, page.324.

[37] Tommy Firman., Decentralization reform and local-government proliferation in Indonesia: Towards a fragmentation of regional development, In *Review of Urban & Regional Development Studies: Journal of the Applied Regional Science Conference*, vol.21, Melbourne, Blackwell Publishing Asia, 2009, page.143. see too, Matondang Elsa Siburian., Fiscal decentralization and regional income inequality: Evidence from Indonesia, *Applied Economics Letters*, Vol.27, no.17, 2020, page.1383; N. Sirait, H. Hendra, and L. Nesti., A computerized study of factors of economic growth disparity in Indonesia, In *Journal of Physics: Conference Series*, vol.1469, Bristol, IOP Publishing, 2020, page.012062; Tessa Talitha, Tommy Firman, and Delik Hudalah., Welcoming two decades of decentralization in Indonesia: A regional development perspective, *Territory, Politics, Governance*, Vol.8, no.5, 2020, page.701; Bangkit A. Wiryawan and Christian Otchia., The legacy of the reformasi: The role of local government spending on industrial development in a decentralized Indonesia, *Journal of Economic Structures*, Vol.11, no.1, 2022, page.10.

[38] Muh Ali Masnun and Radhyca Nanda Pratama., Regulations harmonization of proposal and stipulation of special economic zone in Indonesia, *Law Reform*, Vol.16, no.2, 2020, page.198.

Based on the obstacles identified through Growth Diagnostics, this study formulates a policy framework to support innovation, drawing on the work of Edler.[39] The instruments considered include technical and consulting services, training and skills development, cluster policies, direct government support, innovation networks, regulation, and public procurement. This framework links structural barriers to intervention objectives and relevant policy instruments. However, it is important to distinguish these proposed instruments from programs already in place, as some remain recommendations tailored to the specific needs of each region.

In the Riau Islands, the proposed policies aim to address challenges such as suboptimal inter-regional connectivity, limited workforce competencies, the low processing capacity of the fish and shrimp industry for export, and a lack of fishing port facilities. Technical and consulting services are proposed to enhance logistics efficiency, for instance, by utilizing the National Logistics Ecosystem (NLE) as a digital coordination platform for government agencies, companies, and logistics providers. Meanwhile, training and skills development programs are intended to align the workforce's competencies with industry requirements, particularly in the processing of fishery products. Cluster policies and direct government support are also proposed to expand fish and shrimp processing capacity through financing, incentives, and collaboration among business entities. Furthermore, innovation networks, involving companies, research organizations, and knowledge-producing institutions, are necessary to support the development of fishing port facilities. Nevertheless, the effectiveness of these proposals cannot yet be assessed, as there is currently no evidence regarding the realization of funding, the establishment of networks, or any increase in processing capacity for export.[40] In the Bangka Belitung Islands, policy proposals focus on downstream technology, industrial infrastructure, workforce competency, and regulatory harmonization. Innovation networks and government support are directed toward facilitating technology transfer among research institutions, investors, MSMEs, and local enterprises. Support for the modernization of production machinery, particularly

See too, Marulak Pardede., Investment regulatory reform in Indonesia, *De Jure Legal Research Journal*, Vol.23, no.2, 2023, page.231; Petra Mahy., Indonesia's Omnibus Law on job creation: Legal hierarchy and responses to judicial review in the labour cluster of amendments, Asian Journal of Comparative Law, Vol.17, no.1, 2022, page.51; Zaky Asdhika Sinaga and Lokot Muda Harahap., Transformasi ekonomi Indonesia menuju ekonomi digital: Tantangan dan strategi, *Jurnal Rumpun Manajemen dan Ekonomi*, Vol.2, no.3, 2025, page.26.

[39] Jakob Edler, Paul Cunningham, and Abdullah Gök., *Handbook of Innovation Policy Impact*, Cheltenham, Edward Elgar Publishing, 2016, page.19.

[40] Jakob Edler, Paul Cunningham, and Abdullah Gök., *Handbook of Innovation Policy Impact*, Cheltenham, Edward Elgar Publishing, 2016, page.21. See too, Nur Ikfal Raharjo Sandy and Nuke Pudjiastuti Tri., Indonesia in the BIMP-EAGA: Assessing connectivity development in reducing inequality, *SUVANNABHUMI*, Vol.16, no.1, 2024, page.175; Septia Devi Prihastuti Yasmirullah, Nur Iriawan, and Feronika Rosalinda Sipayung., An economic growth model based on financial credits distribution to the government economy priority sectors of each regency in Indonesia using hierarchical Bayesian method, In *AIP Conference Proceedings*, vol.1905, New York, AIP Publishing LLC, 2017, page.050045.

within the tin processing industry, is expected to enhance value-added output and reduce reliance on the sale of raw materials. Cluster-based policies are also being pursued through the development of the Tanjung Ular and Suge industrial zones, designed to link production activities with trade and logistics infrastructure.[41]

Enhancing workforce competency is proposed through the modernization of industrial vocational training centers and the alignment of curricula with the specific needs of companies as a measure that addresses the shortage of skilled labor identified during focus group discussions (FGDs). Furthermore, regulatory harmonization is essential to mitigate policy inconsistencies across sectors, especially regarding the management of the tin industry, which intersects with mining, maritime affairs, and downstream development. From the perspective of administrative law and governance, coordination among ministries, relevant agencies, and local governments is required to ensure consistency in authority and sectoral policies. Nevertheless, these proposals still require greater clarity regarding which specific regulations need to be harmonized, which institutions should be held responsible, and the mechanisms for coordination and the resolution of policy conflicts.[42]

In North Sumatra, the policy framework is directed toward addressing obstacles such as licensing hurdles, unequal access to natural gas, limited industrial estate infrastructure, workforce competency gaps, and logistical challenges between the Sei Mangkei Special Economic Zone (SEZ) and the Port of Belawan. Technical and consultative services have been proposed to improve the integration of licensing processes through a risk-based Online Single Submission (OSS) system. This policy direction aligns with national business licensing reforms as stipulated in Government Regulation Number 28 of 2025. However, the challenges identified are not limited to the availability of an online system; they also encompass the integration of administrative data, the division of institutional responsibilities, and inter-agency coordination. Consequently, the simplification of procedures must be accompanied by strengthened administrative governance to ensure legal certainty and facilitate operations for industrial players.[43]

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[41] Jakob Edler, Paul Cunningham, and Abdullah Gök., *Handbook of Innovation Policy Impact*, Cheltenham, Edward Elgar Publishing, 2016, page.23. See too, Muh Ali Masnun and Radhyca Nanda Pratama., Regulations harmonization of proposal and stipulation of special economic zone in Indonesia, *Law Reform*, Vol.16, no.2, 2020, page.201; Dwi Budi Santoso., The impact of industrial development zones designation on the convergence of economic growth in East Java, *Applied Economics*, Vol.53, no.49, 2021, page.5751.

[42] Abbas Syahrizal and Ramzi Murziqin., Sharia-based regional regulations in the Indonesian national law system, *Jurnal Ilmiah Peuradeun*, Vol.9, no.3, 2021, page.542. See too, Susi Dwi Harijanti., Regional government in Indonesia, In *Routledge Handbook of Indonesian Law, Milton Park, Routledge*, 2026, page.132; Anggita Yudanti and Wicipto Setiadi., Problematika pembentukan regulasi Indonesia dalam perencanaan pembentukan regulasi dengan perencanaan pembangunan daerah, *Volksgeist: Jurnal Ilmu Hukum dan Konstitusi*, Vol.12, no.5, 2022, page.35.

[43] Victor Imanuel W. Nalle and Martika Dini Syaputri., Deregulation and debureaucratisation through omnibus legislation: Developmentalist rationality and delegated lawmaking in Indonesia, *The Theory and Practice of Legislation*, Vol.12, no.2, 2026, page.7.

Table 1. Policy Framework for Addressing Regional Industrial Constraints

Province	Binding constraints	Policy goals	Proposed innovation policies
Riau Islands	Connectivity, workforce quality, limited fisheries processing, inadequate fishing ports	Lower logistics costs, improve skills and increase fisheries value added	Technical services, training, industrial clusters, direct support and innovation networks
Bangka Belitung	Limited downstream technology, industrial infrastructure, skilled workers and sectoral policy coordination	Increase industrial productivity, technological capacity and regulatory consistency	Innovation networks, direct government support, industrial clusters, training and regulatory harmonization
North Sumatra	Licensing barriers, unequal gas access, inadequate industrial infrastructure, workforce skills and logistics	Improve licensing integration, energy access, productivity and logistics efficiency	Technical services, public procurement, regulatory measures, training and logistics innovation

Source: Authors' analysis based on Growth Diagnostics and the innovation policy framework.[44]

Policy proposals in North Sumatra also encompass public procurement and the strengthening of regulations to foster innovation and improve industrial infrastructure. Public procurement can serve as a demand-side instrument to encourage the development of more efficient industrial goods and services. However, this instrument does not directly address issues such as price disparities or limited gas supplies; resolving these requires specific policies regarding gas allocation and pricing, the development of distribution infrastructure, and the coordination of government authority. Furthermore, the development of industrial estate infrastructure necessitates integrated planning across transport, energy, water, waste management, and digital connectivity.[45]

Strengthening workforce competencies is also a component of the policy framework for North Sumatra. Training and upskilling programs, including curricula based on STEAM (Science, Technology, Engineering, the Arts, and Mathematics), are aimed at aligning educational outcomes with industrial needs. Implementing these initiatives requires coordination among educational institutions, vocational training centers, private enterprises, and government agencies. Regarding logistics, technical and consulting services have been proposed to enhance the

[44] Jakob Edler, Paul Cunningham, and Abdullah Gök., *Handbook of Innovation Policy Impact*, Cheltenham, Edward Elgar Publishing, 2016, page.19.

[45] Jakob Edler, Paul Cunningham, and Abdullah Gök., *Handbook of Innovation Policy Impact*, Cheltenham, Edward Elgar Publishing, 2016, page.32. See too, Government of Indonesia., *Law No. 3 of 2014 concerning Industry*, State Gazette of the Republic of Indonesia Year 2014 Number 4, 2014; Government of Indonesia., *Law No. 25 of 2007 concerning Investment*, State Gazette of the Republic of Indonesia Year 2007 Number 67, 2007.

operation of the railway line connecting the Sei Mangkei Special Economic Zone (SEZ) to the port network. Yet, execution requires clarity on rail connectivity, institutional responsibilities, investment requirements, and operational financing.[46]

Beyond these three provinces, instruments for promoting equitable development include special autonomy funds, sectoral investment strategies, rural development programs, and subregional cooperation. Special autonomy funds for Papua and Aceh provide fiscal support tailored to specific institutional arrangements and unique development needs. Meanwhile, the "Agricultural Development-Led Industrialization" (ADLI) strategy is designed to strengthen linkages between the agricultural and industrial sectors, particularly in regions that remain heavily dependent on primary production. At the village level, the use of development indicators can help identify disparities and direct interventions toward areas with limited access to basic services and economic opportunities.[47]

Subregional cooperation, specifically through the Brunei Darussalam–Indonesia–Malaysia–Philippines East ASEAN Growth Area (BIMP-EAGA), serves as an instrument to strengthen connectivity and economic integration, particularly in the eastern regions. Such cooperation creates opportunities for local areas to connect with cross-border trade and investment networks. However, the realization of these benefits depends on the implementation of transport connectivity, trade facilitation, institutional coordination, and the capacity of local business actors to participate in cross-border economic activities. Consequently, the existence of a regional cooperation framework must be accompanied by implementation and coordination mechanisms that enable local areas to derive tangible economic benefits.[48]

Overall, the implementation of policies aimed at reducing industrial disparities requires an integrated approach encompassing fiscal support, the development of industrial zones, investment facilitation, infrastructure construction, workforce competency enhancement, and institutional coordination.[49] A comparison between empirical obstacles and policy instruments reveals that several interventions remain merely at the proposal stage. For instance, innovation networks, industrial clusters, downstream technological support, and training programs lack sufficient information regarding budget realization, implementing agencies, implementation

[46] Jakob Edler, Paul Cunningham, and Abdullah Gök., *Handbook of Innovation Policy Impact*, Cheltenham, Edward Elgar Publishing, 2016, page.38.

[47] Lukman Hakim, Muhammad Rizaldi, Agus Suman, Marlina Ekawaty, Akmal Riza, and Nasywa Zhahirah., Village Development Inequality in Indonesia: Mapping the Influence of Human Capital and Village Funds, *Jurnal Ilmiah Peuradeun*, Vol.14, no.1, 2026, page.485. See too, Rasidin Karo Karo Sitepu, Mhd Asaad, Mangasi Panjaitan, and Jef Rudiantho Saragih., Spatial agglomeration and regional disparities: A comparative analysis based on the interregional input-output model, *International Journal of Sustainable Development and Planning*, Vol.20, no.11, 2025, page.4653; Muhammad Afdha Alif Almughni, Totok Hendarto, and Arief Budiono., Special autonomy funds and regional economic convergence in Indonesia: Panel evidence from special autonomy areas, *Economy of Regions*, Vol.22, no.2, 2026, page.484.

[48] Nur Ikfal Raharjo Sandy and Nuke Pudjiastuti Tri., Indonesia in the BIMP-EAGA: Assessing connectivity development in reducing inequality, *SUVANNABHUMI*, Vol.16, no.1, 2024, page.190.

[49] A. Prasetyo and D. Gartika., Spatial economy approach to assess the effectiveness of poverty treatment policy models and regional economic impacts, In *IOP Conference Series: Earth and Environmental Science*, vol.887, Bristol, IOP Publishing, 2021, page.012019.

progress, and outcome indicators. Similarly, the mere existence of regulations and industrial zones does not guarantee that issues related to connectivity, energy supply, and logistics have been resolved.

From a legal perspective, these challenges highlight a gap between the existence of a regulatory foundation, institutional capacity, and the actual effectiveness of policy implementation. Therefore, evaluating regional industrial development cannot be limited to identifying government programs; it also requires an assessment of regulatory consistency, the clarity of the division of authority, inter-institutional coordination, and accountability in both implementation and the use of public resources. The evidence presented in this study is better suited for assessing the alignment between structural barriers and policy responses than for drawing conclusions about the overall effectiveness of these policies in narrowing industrial productivity gaps. Consequently, strengthening regulatory governance and implementation capacity is a crucial prerequisite for ensuring a more equitable distribution of the benefits of industrial development across regions.[50]

4. Conclusion

The disparity in industrial productivity between the western and eastern regions of Indonesia reflects differences in regional economic capacity, as well as structural barriers to the development of industrial activities. Analyses of productivity and "Growth Diagnostics" indicate that infrastructure, access to financing, the quality of human resources, technological capacity, and the regulatory and institutional environment are critical factors influencing a region's ability to enhance productivity and generate value-added. Consequently, narrowing this disparity cannot be achieved solely through increased investment; it also requires improving the structural conditions that support regional industrial development.

From a legal perspective, Indonesia already possesses a regulatory framework governing industrial development, investment, spatial planning, local governance, special economic zones, and business licensing. However, the existence of these regulations does not automatically guarantee equitable industrial development. Key challenges persist regarding the harmonization of policies across sectors and levels of government, the institutional capacity of local governments, the coordination of implementation, and the alignment between regulatory objectives and the specific development needs of each region.

Various policy instruments, such as fiscal decentralization, the development of

[50] Jakob Edler, Paul Cunningham, and Abdullah Gök., *Handbook of Innovation Policy Impact*, Cheltenham, Edward Elgar Publishing, 2016, page.19. See too, Adiwan Aritenang and Jung Won Sonn., The effect of decentralization and free trade agreements on regional disparity in a developing economy: The case of Indonesia, 1993–2005, *International Journal of Urban Sciences*, Vol.22, no.4, 2018, page.552; N. Sirait, H. Hendra, and L. Nesti., A computerized study of factors of economic growth disparity in Indonesia, In *Journal of Physics: Conference Series*, vol.1469, Bristol, IOP Publishing, 2020, page.012071; Bangkit A. Wiryawan and Christian Otchia., The legacy of the reformasi: The role of local government spending on industrial development in a decentralized Indonesia, *Journal of Economic Structures*, Vol.11, no.1, 2022, page.11.

industrial estates and special economic zones, the Risk-Based Approach to Online Single Submission (OSS-RBA), and regional economic cooperation, have been directed toward strengthening investment and industrial activity. Nevertheless, their effectiveness hinges on the government's ability to link investment policies with the provision of infrastructure, workforce skills development, technological advancement, and the integration of regions into industrial value chains. Therefore, policy evaluation must consider not only investment outcomes but also the contribution of these policies to enhancing the productive capacity of the regions.

This study underscores that reducing industrial productivity disparities requires the integration of economic policy and legal governance. Harmonizing central and regional regulations, ensuring legal certainty for investment, strengthening institutional coordination, and fostering innovation and downstream industrialization are essential prerequisites for more equitable industrial development. This approach is expected to ensure that investment growth is not merely concentrated in already developed regions, but also expands opportunities for value creation and the strengthening of industrial capacity in Eastern Indonesia.

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