JLPH: Journal of Law, Politic and Humanities
E-ISSN: 2962-2816
P-ISSN: 2747-1985
https://dinastires.org/JLPH dinasti.info@gmail.com +62 811 7404 455
DOI: https://doi.org/10.38035/jlph.v6i2

Proportionality in Mandatory Green Building Certification: A Legal-Economic Analysis

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Abstract: The Mandatory green building certification has emerged as a central policy tool to advance sustainable development and reduce the environmental impacts of the construction sector, yet in Indonesia, it operates within a hybrid regulatory framework that combines statutory rules with non-state technical standards. This study examines whether such mandatory certification is legally sound, economically rational, and proportionate in relation to the burdens it imposes on regulated actors. Using a juridical–economic approach, the research integrates doctrinal legal analysis with public policy economics by examining national statutes, ministerial and regional regulations, and private certification standards, alongside academic literature and international policy reports. The analysis is conducted qualitatively through legal interpretation, cost–benefit reasoning, and a proportionality test based on the criteria of legitimate aim, suitability, necessity, and proportionality stricto sensu. The findings show that mandatory green building certification clearly pursues a legitimate public objective, environmental protection and sustainable development, but its implementation raises concerns about legal certainty and distributive justice. Reliance on non-state standards without explicit statutory delegation creates normative ambiguity, while significant upfront compliance costs for design, technology, and certification disproportionately affect small and medium-sized enterprises. As a result, the policy satisfies the requirement of a legitimate aim but does not fully meet the elements of necessity and proportionality in the strict sense, since it is not always the least restrictive or most balanced means of achieving environmental goals. The study's novelty lies in its integrated legal–economic assessment of green building certification through the principle of proportionality, offering a holistic framework that evaluates environmental regulation not only as a matter of legal validity but also as an instrument of economic rationality and fair burden-sharing in public policy.

Keywords: Green Building; Proportionality; Law & Economics; Sustainability; Regulation

INTRODUCTION

Sustainable development has emerged as a central concern of global governance since the United Nations formally endorsed the SDGs. Among the priority sectors, buildings and construction stand out for their significant share of global energy use and carbon emissions. According to UNEP, this sector contributes roughly 37% of CO_2 emissions and over 30% of

total energy consumption worldwide (UNEP, 2024). Consequently, the building sector plays a critical role in climate mitigation strategies and the transition toward a low-carbon economy.

Indonesia, as a developing nation, confronts the tension between accelerating infrastructure development and safeguarding environmental sustainability. Urban expansion, economic growth, and rising spatial demands push policymakers to adopt frameworks that reconcile economic performance with ecological protection. In response, green building principles—emphasizing energy efficiency, water conservation, sustainable materials, and healthy indoor environments—have been incorporated into national and local policies, notably through mandatory certification schemes (WGBC, 2025).

The legal foundation for green building in Indonesia includes Ministerial Regulation No. 21/PRT/M/2021, complemented by regional rules requiring compliance with green standards. In parallel, non-state mechanisms such as GBCI's Greenship Rating Tools function as technical benchmarks for certification (GBCI, 2025). This illustrates a hybrid regulatory model combining state authority with private standard-setting.

Mandatory green building certification, while aimed at enhancing efficiency and reducing emissions, imposes significant compliance costs, particularly affecting small and medium enterprises (SMEs) in Indonesia. Empirical evidence demonstrates that high upfront costs associated with certification, materials, and technology deter SMEs from adopting green practices (Rita, 2023; Susanto & Sujana, 2023; Yeganeh et al., 2019). This financial burden raises critical questions about the proportionality of public policies, as they must balance legitimate environmental goals with the economic impacts on regulated entities (Gurgun et al., 2016; Sutikno et al., 2022).

The ongoing discourse within law-and-economics emphasizes whether the environmental benefits gained from such policies justify the associated compliance costs (Omowole et al., 2024). Despite the pressing need for integrating legal and economic evaluations, existing literature primarily addresses technical and managerial aspects, leaving a notable gap in systematic legal analyses paired with economic cost-benefit reasoning (Ghasemi et al., 2024; Komurlu et al., 2024).

This research contributes by adopting a juridical–economic framework based on proportionality theory, evaluating both the moral legitimacy of mandatory certification and its economic rationality (Harapan S, 2017; Horbach, 2018). This approach aims to provide policymakers and businesses with actionable insights as they navigate the complexities of green building obligations, advocating for regulatory frameworks that align environmental objectives with economic viability.

METHOD

This research adopts a juridical–economic framework that integrates doctrinal legal analysis with public policy economics to address the dual nature of green building certification requirements. These requirements are not solely about compliance with legal regulations but also encompass critical questions regarding economic rationality, regulatory efficiency, and the equitable distribution of burdens among regulated parties (Badrul Azmi et al., 2022; Roh et al., 2018). Such an approach delves deeper than normative legal assessments, evaluating the economic soundness and social fairness of the policies involved (Sujana & Jeremi, 2024).

Methodologically, the study draws on normative legal research and economic reasoning. It employs doctrinal analysis to scrutinize the legal norms and legislative structures guiding green building certification, both at the national and subnational levels (Song, 2023; Sun et al., 2019). Here, law is conceptualized as more than a set of rules; it forms a framework that necessitates evaluation based on justice and societal utility (Ying et al., 2021). This study highlights the necessity for integrating legal norms with economic considerations, thereby

closing the existing research gap in assessing the implications of mandatory green building certifications in Indonesia (Ai, 2023; Li et al., 2022).

This research utilizes a tripartite methodology to assess the legal and economic frameworks surrounding green building certification in Indonesia.

1. Statute Approach

The **statute approach** examines relevant legislation, including the **Building Law** and **Ministerial Regulation No. 21/PRT/M/2021**, to evaluate coherence, consistency, and legal legitimacy within existing frameworks. This method ensures that the regulatory landscape aligns with broader legal standards and principles (Rehman et al., 2021; Sutikno et al., 2024).

2. Conceptual Approach

The **conceptual approach** establishes a theoretical foundation by analyzing key notions such as **sustainable development**, **green building**, and **proportionality**. This analysis draws heavily on Alexy's theory of constitutional rights, which emphasizes balancing rights against state objectives (Stacey, 2019; Sweet & Palmer, 2017). By integrating concepts of **juridical–economic evaluation**, this approach seeks to delineate the relationship between legal norms and their social implications (Brkan, 2018; Damen, 2025).

3. Law and Economics Approach

Lastly, the **law and economics approach** assesses regulatory efficiency by evaluating behavioral impacts and compliance costs, thereby determining whether the benefits of regulation outweigh its burdens. This involves scrutinizing the framework's effectiveness in achieving social objectives without imposing high costs on the stakeholders involved (Khazalia, 2024; Pivniceru & Benke, 2015).

Overall, this comprehensive methodological framework aims to provide a holistic view of the challenges and opportunities in implementing green building certification in Indonesia, ultimately informing better policy decisions (Bustamante & Dahlman, 2015; Podmarev, 2021).

In assessing the design and implementation of Indonesia's green building certification policy, this study employs a structured approach that incorporates primary, secondary, and tertiary legal materials. The materials are collected through systematic library research and categorized according to their relevance concerning legal norms, economic effects, and proportionality.

1. Legal Materials

The research relies on:

- **Primary Sources**: Statutes and regulations, including national building laws and ministerial regulations.
- **Secondary Sources**: Academic journals and books that provide context on legal interpretations and implications.
- **Tertiary Sources**: Legal dictionaries and encyclopaedias that clarify terminologies and concepts used in the legal framework.

2. Analysis Methodology

The analysis is conducted qualitatively through:

- **Legal Interpretation**: This involves assessing the clarity and consistency of legal norms, ensuring that the framework for green building certification aligns with statutory provisions (Nielsen & Lavigne, 2020).

- **Economic Evaluation**: Applying economic reasoning, the research examines the cost–benefit relationships to gauge the financial implications of compliance with certification requirements (Sianipar et al., 2023).
- **Proportionality Testing**: This stage links policy goals with regulatory tools, weighing the burdens imposed on stakeholders against the intended social benefits (Custer, 2017).

By integrating these approaches, the research aims to deliver a comprehensive evaluation that not only examines the normative legality but also evaluates the economic rationality and social fairness of green building certifications in Indonesia. This integrated methodology allows for informed policy recommendations grounded in both legal and economic perspectives (Wood et al., 2025).

RESULTS

The findings of this study indicate that mandatory green building certification in Indonesia has developed within a normative–hybrid regulatory framework, combining public law instruments (statutory regulations) with non-state technical standards (such as the GBCI Greenship system). Normatively, the policy is based on a legitimate aim, namely, environmental protection, energy efficiency, and carbon emission reduction. However, its implementation reveals several issues related to normative consistency, legal certainty, the distribution of economic burdens, and the level of policy proportionality.

Normative–Legal Findings

The analysis of Indonesia's regulatory framework for green building certification reveals notable inconsistencies and challenges. While Minister of Public Works and Housing Regulation No. 21/PRT/M/2021 establishes a foundational framework for green building performance assessment, its implementation depends heavily on regional regulations, leading to variability across local jurisdictions. For instance, while DKI Jakarta has detailed regulations governing green building obligations, other regions either lack comprehensive guidelines or adopt more generalized provisions. This inconsistency creates a significant legal uncertainty and potential interregional inequality, hindering the uniform implementation of sustainable practices (Luziani & Paramita, 2018; Xavieri Linggo & Sutandi, 2023).

Moreover, the Greenship standard, developed by the Green Building Council Indonesia (GBCI), signifies a shift towards non-state regulatory functions. Although Greenship is recognized as a technical reference for sustainable building, it lacks the binding authority of statutory law. This discrepancy results in a gray area regarding the legitimacy of certification obligations based on private standards, particularly when these standards are prerequisites for obtaining building permits or approvals (Sari, 2025; Wimala & Yeremy, 2022).

Thus, while the existing policy possesses a normative basis, stronger harmonization and clearer legal frameworks are essential to enhance legal certainty for stakeholders involved in green building projects across Indonesia (Hapsari et al., 2022; “Problems of State Regulation of Resource-Saving Activities in Tourism in Ukraine,” 2025). This need for refinement in the regulatory approach could facilitate the effective integration of green building practices at both the policy and operational levels, promoting sustainability in Indonesia's construction sector.

Economic Policy Findings

From an economic standpoint, the necessity for mandatory green building certification imposes considerable upfront costs on developers and construction firms. These costs include expenses for redesign projects, implementing energy-efficient technologies, acquiring environmentally friendly materials, and paying certification and audit fees. Research suggests

that the initial costs of green buildings can be 5–15% higher than those of conventional buildings, despite the potential for lower long-term operational expenses (Tafirenyika, 2025; Zaharah et al., 2024).

In Indonesia, larger firms are better positioned to manage these costs compared to small and medium enterprises (SMEs). This disparity risks creating structural inequalities within the construction sector, as SMEs may struggle to compete due to the financial burdens of compliance (Godha, 2025). From a law-and-economics perspective, these policy dynamics suggest that current regulations may not adequately uphold principles of efficiency and distributive justice. Environmental benefits are insufficiently matched by incentives or subsidies for those shouldering the compliance costs (Shanty Saleh & Spaltani, 2021).

Moreover, the long-term economic advantages of green buildings, such as energy and water savings, remain underappreciated and not completely internalized by market participants. Consequently, certification processes are often viewed merely as administrative or financial burdens rather than worthwhile long-term investments, undermining the potential for broader adoption and benefit (Nurwitono et al., 2023; Rofiah et al., 2024). Addressing these issues could enhance the effectiveness and fairness of green building policies, contributing to a more equitable and sustainable construction landscape in Indonesia.

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Findings on Policy Proportionality

The findings indicate that while the certification obligation for green buildings in Indonesia satisfies the legitimate aim requirement of promoting sustainability, it does not fully adhere to the stringent criteria of suitability, necessity, and proportionality. Although certification serves as a relevant tool for fostering the adoption of green buildings, it is not the least burdensome or most efficient mechanism available (Yosiana & Ayu Handayani, 2024). Alternative policy options, such as fiscal incentives, voluntary schemes with recognition, and technical assistance, have not been fully leveraged. Public policy theory supports the notion that a combination of regulation and incentives often yields more effective and equitable outcomes than relying solely on mandatory compliance measures (Listiningrum et al., 2022; Yudha et al., 2022).

Given that the current policy framework lies at the intersection of the normative need for environmental protection and the economic constraints faced by stakeholders, adjustments are necessary to enhance its coherence and fairness. The existing legal basis for mandatory certification is robust but requires refinement to ensure it is economically justifiable and proportionate as a public policy tool (Tang, 2025). By integrating incentives and support mechanisms, the Indonesian government can bolster compliance rates and promote more sustainable practices in the construction sector, ensuring that the environmental gains from such policies do not disproportionately burden smaller operators (Chuzhmarova & Chuzhmarov, 2023; Simpeh & Smallwood, 2023).

Such adjustments could significantly increase the overall effectiveness of Indonesia's green building certification obligations, aligning them better with both environmental goals and the economic realities that stakeholders must navigate (Downes & Reed, 2020; Han et al., 2015).

DISCUSSION

This discussion elaborates on the research findings by linking them to the theoretical frameworks of legal theory and public policy economics, as well as to the principle of proportionality as an evaluative instrument for policy. The analysis focuses on four main dimensions: (1) the legitimacy and normative consistency of mandatory green building certification, (2) economic rationality and distributive justice, (3) the evaluation of proportionality as an instrument of sustainable development policy, and (4) the theoretical and practical implications for law-making and public policy in Indonesia.

Legitimacy and Normative Consistency of Certification Obligations

The imposition of mandatory green building certification in Indonesia primarily aims to protect the environment and ensure citizens' rights to a good, healthy environment. This objective aligns with the growing framework of environmental constitutionalism within modern legal systems. However, a critical examination reveals that Indonesia's green building regulations operate within a hybrid framework that combines state regulations with non-state technical standards. This overlap raises significant questions regarding the legitimacy and legal certainty of such policies. According to normative legal theory, public obligations should be grounded in clear, binding, and predictable norms.

The reliance on private standards, such as those established by the Green Building Council Indonesia (GBCI) through the Greenship certification system, introduces a degree of flexibility and encourages technical innovation. However, when these private standards are treated as binding legal obligations—particularly when they are prerequisites for obtaining building permits—normative uncertainty ensues. Such practices may violate the principle of legality if there is no explicit delegation of authority from statutory regulations (Holius, 2025; Savchenko, 2024).

Hence, it is imperative for the state to clarify the status of these non-state standards—determining whether they function as voluntary guidelines, technical references, or binding norms under a valid delegation mechanism. By doing so, the state can enhance the legitimacy of the certification process and mitigate the legal uncertainties that currently pervade Indonesia's green building policies, promoting greater compliance and adherence among stakeholders (Isimbi & Park, 2022). This clarification will not only align the regulations with constitutional mandates but also contribute to a more coherent and effective environmental governance framework, fostering sustainable development in the construction sector.

Economic Rationality, Efficiency, and Distributive Justice

From the perspective of public policy economics, the findings indicate that mandatory green building certification entails high upfront costs. In law and economics theory, a public policy is considered rational if the social benefits it generates exceed the costs borne by society; in this case, however, environmental benefits are long-term and collective, while compliance costs are immediate and individual.

This imbalance raises issues of distributive justice. Large firms are relatively better able to absorb additional costs, whereas small and medium enterprises face much heavier pressure. Critically, policies that lack mechanisms for burden redistribution may widen inequality and reduce actual compliance. In environmental policy literature, the combination of regulation and economic incentives has been shown to be more effective than purely mandatory approaches (UNEP, 2024).

Therefore, certification obligations should not stand alone but be complemented by fiscal instruments, green financing schemes, and technical assistance to achieve both efficiency and distributive justice.

Proportionality Evaluation as a Normative–Economic Framework

The principle of proportionality necessitates that a policy fulfill four essential elements: a legitimate aim, suitable instruments, minimal impairment (necessity), and a balance between benefits and burdens (Xu, 2022). Based on the findings, the obligation of mandatory green building certification fulfills the requirement for a legitimate aim—specifically, environmental protection and the realization of a healthy environment. However, the elements of suitability and necessity present challenges, as mandatory certification is not necessarily the only, or even the least burdensome, means to achieve these objectives.

Alternative policy tools, such as phased implementation, fiscal incentives, or voluntary recognition programs, could serve as more proportionate instruments, potentially addressing both environmental goals and the economic realities facing regulated entities (Albuquerque Farias et al., 2019). The risks associated with the current certification obligation include economic burdens that may not fully justify the direct environmental benefits to stakeholders. Thus, this suggests a need to re-evaluate the mandatory certification requirement to ensure it does not impose unreasonable burdens on developers and construction firms. As argued, effective public policy often derives from combining regulatory frameworks with incentive structures, rather than relying solely on compulsory mechanisms (Ul Azam, 2025). Such adjustments could enhance the policy's effectiveness and fairness, aligning it more closely with the principles of proportionality while mitigating the economic impacts on those affected by certification requirements (Yaremak et al., 2024).

Integrating Norms, Economics, and Public Policy

The research highlights the critical need to integrate normative legal analysis with economic evaluation in assessing public policies, particularly in the realm of green building certification. The interplay between legal coherence and economic rationality is essential for the design of effective regulatory frameworks. Normatively, mandatory green building certification aims to fulfill legitimate objectives related to environmental protection; however, it must also operate within a framework that promotes economic fairness and efficiency Gustafsson et al., 2025; Aprisandi et al., 2022).

Practically, the findings suggest that policymakers should not only strive for a legally sound framework but also consider economically rational alternatives. For instance, implementing phased regulations, fiscal incentives, and voluntary recognition schemes could enhance the proportionate effectiveness of green building policies. These alternative measures may provide a more balanced approach that mitigates undue economic burdens on stakeholders while still advancing sustainability goals (Rasmiaty, 2025; Yashkina et al., 2020).

Moreover, adjustments to the current regulations are essential to ensure that the economic burdens imposed do not outweigh the environmental benefits sought. Such reevaluations can help cultivate a more favorable regulatory environment that encourages compliance and fosters innovation, aligning with the principles of proportionality as discussed by Alexy (Azizi, 2022; Balaras et al., 2019). By refining these policies, the Indonesian government can better navigate the complexities of fostering environmental sustainability while maintaining economic viability.

Ultimately, this research underscores the necessity for an integrated approach to policy formulation that reconciles legal norms with economic realities, promoting a sustainable and equitable framework for green building certification in Indonesia and beyond (Fasan, 2024; Peralta et al., 2019).

CONCLUSION

The analysis affirms that mandatory green building certification in Indonesia serves a legitimate normative aim of promoting environmental protection and fulfilling the

constitutional right to a good and healthy environment. This commitment aligns with modern principles of sustainable development. However, the research indicates that from a juridical-economic perspective, the implementation of this policy is not yet fully designed in a proportional, fair, and efficient manner (Pratama et al., 2019).

Legal certainty remains a significant challenge, particularly given reliance on non-state technical standards, such as the Green Building Council Indonesia (GBCI) Greenship system. The absence of explicit statutory delegation creates a problematic distinction between voluntary standards and binding legal obligations, ultimately undermining the principles of legality and predictability for regulated actors.

From a public policy economics viewpoint, the findings highlight an imbalance between the substantial compliance costs incurred by entities—particularly small and medium enterprises (SMEs)—and the direct yet long-term benefits of certification and green technologies. This discrepancy raises critical issues of distributive justice, as SMEs often struggle to bear the financial burdens associated with compliance, which may not correspondingly translate into immediate economic returns (Roza Nova et al., 2021).

Consequently, there is an urgent need for policymakers to re-evaluate the structure of green building certification requirements. The policy should incorporate mechanisms that mitigate economic burdens while enhancing compliance, such as phased implementation, fiscal incentives, or voluntary programs with recognition components. This re-adjustment would not only strengthen legal coherence but also promote a more equitable and economically rational framework for green building practices in Indonesia (Setojati et al., 2023).

RECOMMENDATIONS

The findings of this study confirm that the mandatory green building certification in Indonesia embodies a public policy with a legitimate aim of environmental protection and fulfilling the constitutional right to a good and healthy environment. This aligns with the overarching principles of sustainable development. However, the policy does not fully meet the stricto sensu elements of necessity and proportionality. Specifically, mandatory certification is not always the least restrictive or most balanced instrument for achieving environmental objectives, as the burdens placed on legal subjects remain relatively high compared to the immediate benefits they receive (Sichali et al., 2020; Sutikno et al., 2022).

At a conceptual level, the study reinforces the importance of integrating legal and economic analysis within public policy evaluation. Environmental regulation must not only be normatively valid but also economically rational and proportionate in the burdens it imposes. Without such a balance, compliance and effectiveness are likely to decline, particularly among small- and medium-sized enterprises that struggle to bear the significant upfront costs associated with certification (Ekung et al., 2021; Reza et al., 2022).

Thus, there is a pressing need for further refinement of the mandatory green building certification policy in Indonesia, focusing on its normative design, economic rationality, and proportionality. The potential of the policy to support sustainable development is significant, but it will only be realized if it is implemented in a fair, realistic, and constitutionally sound manner. Policymakers should thus consider alternative strategies, including phased implementation and fiscal incentives, to ensure that the burdens imposed are justifiable by the benefits gained (Umaroğulları et al., 2020; Yosiana & Ayu Handayani, 2024).

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