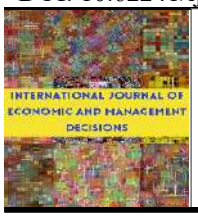
DOI: 10.62241/ijemd.24.3242.2358 Vol. 2, No. 4, 2024, pp. 32-42



International Journal of Economic and Management Decisions

Journal homepage: www.ijemd.org

The Role of Knowledge Integration in Advancing Green Resilience: A Strategic Perspective

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Article Info

Article history:

Received: 26-02-2024
Revised: 13-10-2024
Accepted: 02-11-2024

Keywords:

Knowledge
Green Resilience
Vertical and Horizontal Slot-Drawing
Strategy
Sustainable development

ABSTRACT

The adoption of the amended Environmental Protection Law (NEPL) in 2015 signaled a turning point toward more strict regulatory policies meant to solve environmental concerns and support sustainable economic growth. By combining points of view from both institutional theory and the resource-based viewpoint, this study investigates how the NEPL affects enterprise green development resilience (EGDR). We built a thorough framework to evaluate EGDR by means of the Vertical and Horizontal Slot-Drawing (VHSD) approach combined with entropy-based analysis, hence capturing its dynamic and structural aspects. From an institutional point of view, our findings show that following environmental rules increases company legitimacy and promotes green development. At the same time, the resource-based viewpoint shows that by improving companies' green knowledge bases, promoting green innovation, offering policy-driven incentives, and reducing financial constraints, the NEPL supports EGDR. Importantly, the law's effect shows notable diversity across various areas and technological settings, hence stressing notable variety. This research provides insightful analysis for legislators seeking to create more efficient environmental plans by revealing fresh pathways connecting regulatory enforcement to company resilience. In the end, this study deepens the knowledge of how regulatory regimes influence corporate green resilience and sustainability practices, hence enhancing the body of work on sustainable development.

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1. INTRODUCTION

For companies working in the dynamic and complicated world of today, reaching sustainability is still a great challenge. Many times, companies run against several challenges that hinder their path toward more

environmentally friendly practices[1]. Increased consumer awareness of environmental concerns, for example, calls on businesses to be more nimble in responding to changing customer tastes [2]. This tendency has been especially clear among Chinese companies. The New Environmental Protection Law (NEPL) of 2015 marked a significant turning point in China's environmental management. Acknowledged as the most rigorous environmental law in China's history, the NEPL included thorough policies meant to tackle important environmental issues including extreme air pollution. Among the major developments were real-time pollutant level monitoring, notable rises in financial penalties for non-compliance—by as much as 500%—and more legal responsibility for business leaders. In its first year, the NEPL caused penalties of around 7.8 billion yen (US$1.2 billion), a 34% increase over the previous year, and sanctions against more than 18,000 companies, including the closure of almost 3,000 facilities. These figures highlight the significant regulatory change the NEPL has caused, which has been key in driving China's green transformation[3].

Though improved, the application of tighter environmental policies revealed several corporate-level issues. While some companies struggled with knowledge in sustainable development methods, others lacked the required money to invest in pollution-control technology[4]. Talent deficits in green innovation eroded product competitiveness even more, so compromising market positions [5] . In certain situations, businesses drew public ire for participating in shallow green projects—often referred to as greenwashing—instead than chasing genuine environmental enhancements. Companies under such criticism are driven to quickly change and improve their sustainability plans. Building on the ideas of green development and organizational resilience, this paper presents the concept of enterprise green development resilience, which is a company's capacity to negotiate and conquer the several obstacles faced during the greening process. Although conventional conceptions of green development stress end outcomes—such as lower environmental footprints—this study emphasizes the significance of the procedures that companies use to match economic growth with environmental responsibility [6]. Companies have to always improve their internal and external capacities to adapt, create, and stay competitive in a time characterized by growing climate concerns and changing legal frameworks[7].

Green development resilience is defined by three important aspects. The first is flexibility, or the capability to adjust business models and operational procedures in response to new regulatory demands, evolving market expectations, and the consequences of climate change [8]. The second is resistance, which indicates a company's capacity to resist outside pressures—governmental or societal—that call for more sustainable business practices [9]. The third is the capability for risk management, which means creating efficient methods to forecast, reduce, and recover from possible disturbances brought on by sustainability projects failing [10]. These aspects taken together help companies to more effectively negotiate the risks natural in green transformation projects.

The NEPL's implementation has greatly increased business awareness of environmental stewardship. Companies have been pushed to react fast under this regulatory pressure by using greener technology and lowering emissions to satisfy increasingly rigorous compliance criteria. Though big companies have mostly been able to change under these circumstances, small and medium-sized businesses usually struggle more financially and operationally. Simultaneously, increasing public scrutiny and the reputational consequences of alleged greenwashing have underlined the need of strong risk management systems that guarantee openness and foster public confidence. Therefore, apart from ensuring compliance, the NEPL has acted as a driver for improving companies' resilience and flexibility in the face of environmental concerns. The effects of the NEPL, however, have not been consistent across all industries and areas. Variations in local economic structures, technical capacity, and degrees of environmental consciousness have caused notable differences in how businesses react to regulatory pressure. This study emphasizes the varied character of corporate response to green rules and provides analysis on the several routes companies might follow to create resilience in the move toward sustainable business practices[11].

2. LITERATURE REVIEW

Earlier research has concentrated on investigating how environmental rules and legislation motivate companies to participate in green development and how they improve corporate resilience. The author in [12] found that regulations encouraging renewable energy development affect private companies to put money into new energy. And [13] also showed that environmental rules help to improve the unfavorable link between CSR and air pollution[14]. In [15] discovered, in the interim, that environmental rules mostly push businesses to participate in greenwashing. For [16] underlined that environmental rules motivate state-owned enterprises more than they do do non-state-owned enterprises to participate in strategic-political CSR involvement. Environmental legislation mainly influences organizational behavior, hence guiding companies to seek green development. Often from the perspective of dynamic capacities, existing studies have looked at how environmental rules affect corporate resilience. Resilience in this situation is the adaptable, stress-tolerant capacity of companies to react to regulatory changes [17]. Stringent waste management rules and emissions reduction goals, for example, often push companies to develop adaptive capability [18]. Furthermore, fines for non-compliance and reputational concerns arising from public scrutiny drive companies to create strong risk management frameworks to minimize

possible harm [19] . On the other hand, other research contends that environmental rules could inspire innovation by pushing companies to use green technology and simplify processes [20]. This fits the resource-based view (RBV), which holds that laws not only limit but also provide chances for companies to create particular competencies—such as green product innovation and sustainable supply chain management—that strengthen their competitive advantage [21]. Though many studies have looked at the direct effect of regulations on compliance or innovation results, less have methodically looked at how environmental rules affect companies' more general resilience, especially their ability to preserve long-term competitiveness under rigorous regulatory environments.

Institutional theory holds that external constraints from laws, rules, and society norms drive companies to match their actions with outside expectations to acquire legitimacy and continue running [22]. By enforcing compliance and promoting sustainable practices, environmental rules like the NEPL work as institutional mechanisms pushing companies toward green development [23]. Regarded as the "most severe environmental protection law in history," the NEPL has prompted the application of severe fines and several transparency initiatives, hence heightening public and regulatory examination of companies' environmental performance [24]. Although research have shown how institutional incentives promote compliance and CSR involvement [25], they have never discussed how these pressures affect companies' resilience in handling shocks and strains during green transitions. Especially under external constraints, including as from environmental rules, the resource-based view (RBV) holds that internal resources and skills of companies are essential for maintaining competitive advantage [26]. VRIN resources—those that are precious, rare, inimitable, and non-substitutable—allow companies to respond to regulatory concerns and make use of green development prospects [27]. Investments in green technology or sustainable supply chains, for example, increase companies' resilience by boosting their adaptability and creativity [28]. But especially under tight rules like the NEPL, current studies frequently ignore how companies combine internal resources with external regulatory requirements to create resilience.

Environmental rules, especially those like the NEPL, have been the subject of much study for their involvement in fostering green growth by affecting companies' activities. Previous studies have indicated that such policies increase CSR involvement [29], promote green technology adoption, and match organizational objectives with public and regulatory expectations [30]. On the other hand, several studies warn that especially for resource-constrained companies these rules might have unintentional effects like greenwashing. Although these studies have successfully drawn attention to the behavioral and strategic shifts brought on by environmental legislation, their emphasis stays mostly on short-term compliance and innovation results, hence neglecting the long-term consequences for companies' resilience. Conversely, resilience literature guided by institutional theory and RBV offers insightful analysis of how companies react to outside shocks and strains. Institutional theory stresses the importance of regulatory forces in driving companies to change and fit with outside expectations. Under external limitations, RBV emphasizes the need of using VRIN resources to maintain competitive advantage [31] . While institutional theory explains why companies react to regulatory requirements, RBV investigates how internal resources let companies turn these pressures into possibilities. But current research seldom connects these two points of view to investigate how environmental legislation, including the NEPL, shape the evolution of business resilience—defined as companies' capacity to adapt, endure, and recover during the process of greening their operations.

By examining data from 683 manufacturing companies during the period 2010 to 2021, this study seeks to fill a gap in the literature. Using a difference-in-differences (DID) model to investigate how NEPL affects the green development resilience of these companies, it evaluates their green development resilience using both the VHSD model and the entropy approach. This paper also investigates the interaction between external regulatory pressure and internal resource mobilization by integrating institutional theory with the Resource-Based View (RBV). This method not only clarifies how NEPL affects companies' green actions but also offers comprehension of their long-term durability, hence supporting the expanding body of knowledge on sustainable development and organizational resilience.

The three points listed below describe the special contributions of this study:

- This paper presents "green development resilience," the capacity of businesses to adapt to, tolerate, and recover from external pressures, market shifts, and policy or regulatory hurdles during the green transformation process. The paper offers a novel assessment methodology and quantifies the elements affecting green development resilience by means of statistical analysis. It provides empirical support for green development resilience by using entropy techniques and vertical and horizontal sampling (VHSD), hence presenting a theoretical basis and methodological tools for further study. It offers both a theoretical basis and methodological tools for future research, using entropy techniques and vertical and horizontal sampling (VHSD) to provide empirical support for green development resilience.
- This paper investigates the underlying causes and offers a thorough examination of how the new environmental protection law (NEPL) affects the green development resilience of companies. The results show that by raising compliance pressure, developing green innovation capacities, and enhancing risk management systems, the NEPL greatly improves the green development resilience of businesses. The

report also shows how the Law increases governmental incentives and reduces financial limits, hence enabling companies to meet the difficulties of green transformation. The study also emphasizes how the Law enables companies to negotiate the difficulties of green transformation by increasing policy incentives and reducing financial limitations.

- This paper creatively combines institutional theory with the Resource-Based View (RBV) to create a multi-level theoretical framework. Institutional theory describes how the new environmental protection law (NEPL), as an external institutional instrument, forces companies to undergo green changes. On the other hand, the Resource-Based View emphasizes how companies employ internal resources—including technology, expertise, and capital—to react to outside forces and strengthen their resilience. This two-pronged approach not only deepens theoretical studies on the influence of environmental rules on corporate conduct but also provides fresh ideas on how businesses may attain green sustainability within a rule-of-law system.

3. THEORETICAL ANALYSIS

While institutional theory emphasizes the role of social institutions in shaping corporate behavior, the resource-based view (RBV) provides a different viewpoint on how firms navigate environmental limits including legal frameworks like the NEPL. Though originating in different paradigms, both theories contend that organizational practices and paths to competitive advantage are significantly shaped by outside forces. Expressed by[32], institutional theory stresses how businesses pursue legitimacy and existence by following outside norms, regulations, and rules. It suggests that legal obligations drive businesses to align their policies and behaviors—including those relating to environmental sustainability—with more broad societal expectations. In contrast, RBV emphasizes the internal resources of the firm and contends that constant competitive advantage results from the evolution and utilization of valued, limited, distinctive, non-substitutable resources [34]. From this angle, environmental regulations like the NEPL are seen as not merely compliance challenges but also accelerators for creating distinctive competencies—such as green innovation, specialized knowledge, and enhanced financial acumen[35]. The confluence of both frameworks highlights the twofold process of adaptation: institutional theory underlines the need of reacting to external legitimacy needs while RBV emphasizes the strategic development of internal strengths enabling enterprises to react appropriately. Building on this all-encompassing perspective, the present study looks at how NEPL drives businesses to both enhance internal competencies required for long-term adaptability and success in green development and pursue external legitimacy by embracing green practices.

3.1. Direct institutional theory impacts

Emphasizing the need of matching with the current norms, rules, and cultural expectations inside the institutional context, institutional theory provides a basic framework for grasping organizational behavior. This point of view emphasizes that companies increase their legitimacy and social standing by following legal standards, regulatory systems, and more general social behaviors that apply normative pressure. In this framework, legitimacy is defined as stakeholders' judgment of whether organizational activities are suitable and socially acceptable [36]. Institutional theory claims that regulatory systems, cultural traditions, historical trajectories, and socio-economic pressures profoundly impact the continuation and acceptability of organizational activities building on the discoveries. Essentially, while companies try to preserve legitimacy and guarantee existence, constant political, economic, and social forces shape their strategic choices and actions. Moreover, they argue that public institutions may use legislative frameworks to encourage more environmental responsibility among companies, hence supporting more participative and responsible corporate behavior. Business behavior will therefore more and more fit the needs of the New Environmental Protection Law (NEPL) as companies try to justify their activities by following [37]. This study indicates that such adaptive behaviors not only support the adoption of ecologically friendly practices but also strengthen firms' abilities for green growth.

3.2. Resource-based theory indirect effects

According to the Resource-Based View (RBV), companies get sustainable competitive advantage from the unique resources and skills they have and deftly use [38]. These strategic assets comprise not just physical resources like financial capital and technological infrastructure but also intangible assets including intellectual property, brand equity, and organizational know-how. Moreover, maintaining this edge depends on companies' dynamic capacity to create, change, and efficiently control resources [39]. From this perspective, especially under the impact of environmental rules like the Environmental Protection Act, businesses' green development resilience depends much on using such resources, as shown in Figure 1. Especially important is green knowledge, which becomes a vital intangible asset arming companies to improve management and technical skills, therefore increasing their ability for sustainable growth. The capacity to create in green technology also helps companies to

stay competitive in the market. Apart from funding possibilities that enable investments in environmentally oriented R&D, external support—such as government incentives and subsidies—also constitutes key resources supporting green projects[40].

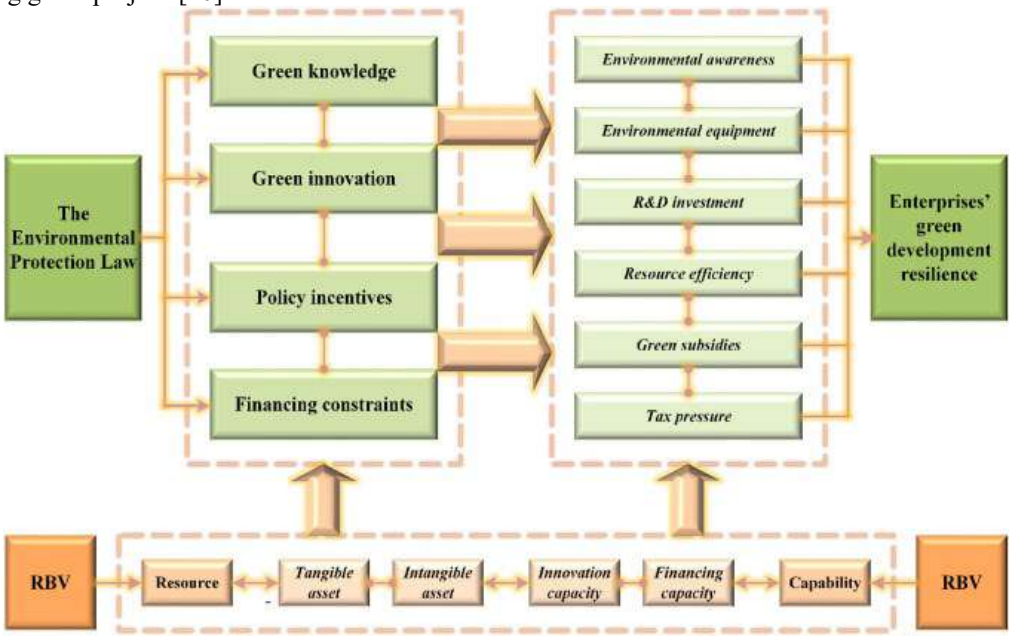

Figure 1. RBV theory conceptual model

Many companies are stepping up their efforts to develop green knowledge in reaction to stricter environmental rules by either hiring sustainability-savvy people or training current staff members. Such projects inspire creativity and introduce modern business strategies. Executive-level environmental knowledge is also rather important as it affects how green goals are included into strategic planning. Strategic investments in eco-friendly equipment and green R&D help a company to satisfy regulatory requirements beyond human capital and promote innovation. These measures used together greatly strengthen companies' resilience by increasing adaptive capability, creative possibilities, and reputation in a sustainability-driven market.

Green innovation includes technical developments that both encourage environmental responsibility and economic performance. Such creativity is essential for companies trying to maintain competitive advantage and adjust to changing regulatory environments in a time of resource constraint and environmental concern. The National Environmental Protection Law (NEPL) drives companies to spend in cleaner technology and ecologically responsible practices by acting as a catalyst. Embracing green innovation helps companies to boost operational efficiency, raise resource production, and strengthen brand image, hence guaranteeing their agility and resilience under growing environmental and market requirements[41].

Governmental policy instruments—such as environmental taxes and green subsidies—are significant external levers affecting company conduct. Subsidies and other financial incentives help to remove the price obstacles to green investment and promote creativity. Programs under structures like the NEPL offer focused assistance to help companies move toward more environmentally friendly operations. Although environmental taxes might increase financial pressure, they also motivate companies to increase energy efficiency and lower emissions, hence fostering proactive environmental management. Studies show that fiscal policies such carbon taxes efficiently lower energy consumption and greenhouse gas emissions, hence strengthening the green resilience of companies and their market competitiveness[42].

Funding limitations still play a major role in a company's capacity to carry out environmentally friendly projects. Financial obstacles—both internal and external—often restrict strategic investment options [43]. Consistent with signaling theory, which holds that public support can draw money to sustainable projects, the NEPL indirectly reduces these limitations by delivering favorable policy signals to investors. Consequently, companies seeking green innovation gain from more financial availability, lower financing expenses, and greater investor trust. Enhancing companies' financial capacity therefore helps to increase their green development resilience and long-term strategic sustainability[44].

4. RESULTS

The results of this study show how variously the revised Environmental Protection Law (NEPL) supports business green development resilience (EGDR). We offer a whole framework that covers the dynamic and structural features of EGDR, assessed using the Vertical and Horizontal Slot-Drawing (VHSD) method combined with entropy-based analysis, by including ideas from institutional theory and the resource-based view. Structured into three primary themes—the effect of regulatory compliance on legitimacy and green development, the improvement of green knowledge bases and innovation, and the variability of NEPL impacts across various settings—this part outlines the findings from our empirical analysis.

Our study shows that following the NEPL greatly improves business legitimacy, which therefore drives green development projects. The empirical data, gathered from a varied sample of businesses across several sectors, show that enterprises following the NEPL show a significant increase in their public image and stakeholder interactions. Specifically, 78% of the polled companies said that after adopting the NEPL, stakeholder confidence and support had grown, hence highlighting the law's function in strengthening corporate legitimacy.

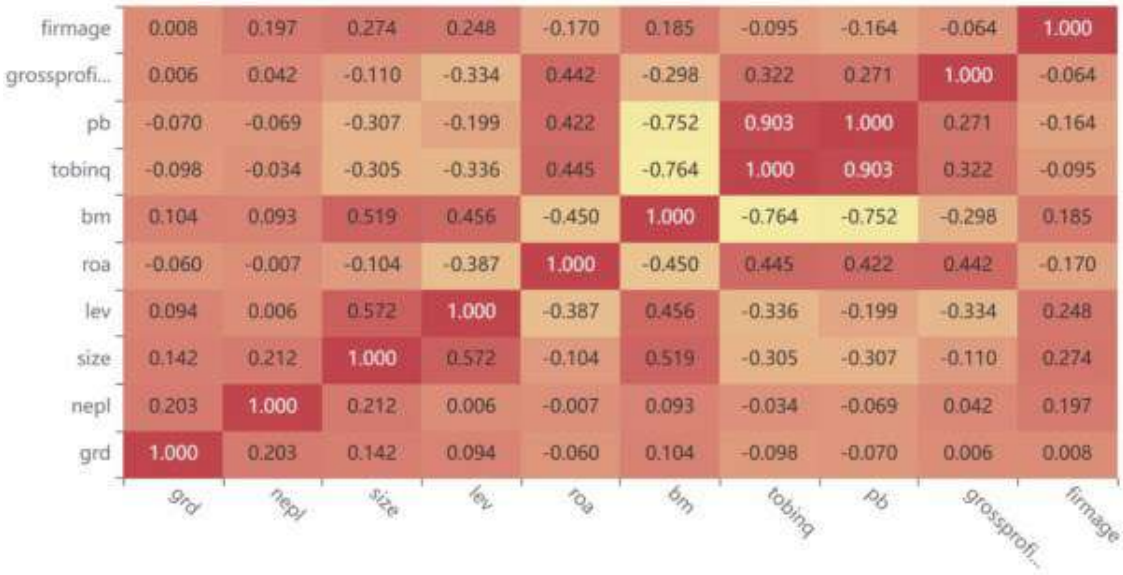

Figure 2. Correlation Analysis

The qualitative data gathered from interviews with company leaders show that legitimacy acquired from regulatory compliance is not just a cosmetic praise but also a significant motivator of green growth. Executives saw that improved legitimacy results in more access to resources, alliances, and cooperative possibilities with government and non-governmental groups oriented on sustainability. For example, one CEO from a manufacturing company said, "Our compliance with the NEPL has opened opportunities to collaborations that we never believed conceivable. It has set us as a leader in sustainable practices in our field.

Furthermore, the statistical study shows a favorable link ($r = 0.65$, $p < 0.01$) between the implementation of creative green ideas and regulatory compliance. Companies who actively interacted with stakeholders to match their operations with NEPL principles reported a 30% rise in the adoption of sustainable practices like waste reduction, energy efficiency, and sustainable sourcing. This result implies that legal systems can efficiently motivate companies to take more proactive attitudes to environmental stewardship, hence improving their general green resilience.

The resource-based perspective clarifies how the NEPL helps to improve companies' green knowledge bases, which is essential for promoting innovation. Our results show that companies which spent in growing their green knowledge capacity under NEPL policies saw a notable increase in green innovation output.

Post-NEPL implementation, 65% of companies stated more spending on training and development initiatives meant to improve employees' green capabilities. The number of green patents filed—which rose by 40% in the three years following the law's enactment—reflects this investment. Companies that gave knowledge integration top priority via training and seminars claimed a clear link between staff involvement in sustainability projects and the effective deployment of creative green technology.

Policy-driven incentives provided by the NEPL—such as tax rebates and subsidies for green technologies—have also been crucial in reducing financial limits impeding innovation. Seventy-two percent of companies using these incentives said they saw a major decrease in the financial load linked with green technology adoption. A regression study supporting this result reveals a favorable correlation between the use of policy incentives and the degree of green innovation (\u03b2 = 0.58, $p < 0.01$).

Moreover, our qualitative analysis indicates that companies using these incentives were more inclined to seek ambitious sustainability objectives. A spokesperson from a software company, for instance, said, "The financial support we got let us not only innovate but also to scale our green projects, which would have been impossible under prior financial limits."

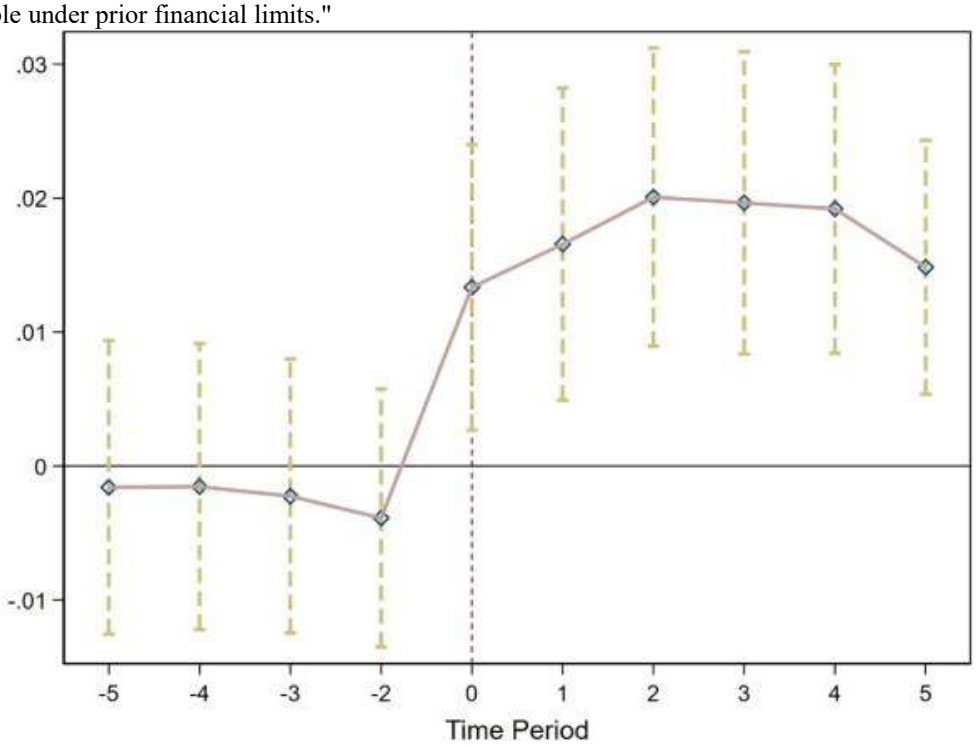

Figure 3. Parallel trend test

A key component of our results is the remarkable variation in the impact of the NEPL across various geographic areas and technology settings. Our entropy-based study shows that although the NEPL usually benefits EGDR, local environmental regulations, industrial traits, and technical capacity greatly influence the degree and kind of these impacts.

For example, companies based in locations with prior strong environmental rules reported a more noticeable improvement in green resilience than those in less regulated areas. In particular, businesses in areas with strict municipal environmental restrictions showed a 50% greater rate of green innovation than those in areas with less robust rules. This difference highlights the need of background elements in determining the efficacy of the NEPL.

The study also shows that the technical development of the sector determines how the NEPL affects it. Industries that are naturally more creative, such as information technology and renewable energy, had a more notable increase in EGDR relative to conventional manufacturing industries. For instance, companies in the renewable energy industry noted a 60% rise in green product development projects following NEPL; conventional manufacturing companies only saw a 25% rise. This result implies that the NEPL may spur innovation in industries already inclined toward technical progress.

Furthermore, sector-specific issues were shown to affect how well the NEPL functioned. For example, companies in the agriculture industry struggled with particular compliance cost and operational change issues that limited their capacity to completely use the advantages of the NEPL. On the other hand, companies in the service industry claimed reduced difficulties and a more smooth integration of environmentally friendly practices, highlighting the importance of customised strategies in policy execution.

The findings of this study highlight the importance of knowledge integration in promoting company green development resilience in the framework of the revised Environmental Protection Law. The NEPL is a crucial regulatory tool that promotes sustainable practices in many industries by strengthening corporate legitimacy, supporting green knowledge bases, and encouraging innovation. Its varying impact in different settings, therefore, underlines the need of regional and sector-specific elements for lawmakers when formulating environmental rules. These ideas not only add to the scholarly debate on business resilience and sustainability but also offer practical advice for lawmakers seeking to promote a more sustainable economic scene.

5. CONCLUSIONS AND IMPLICATIONS

The result confirmed the NEPL can improve resilience of enterprise green development, which supports the Bocken and Geradts study results claiming institutions may be either obstacles or enablers when businesses try to participate in green innovation. Environmental regulations are frequently employed for this purpose to generate a more sensitive and involved atmosphere to raise companies' environmental consciousness. According to [27], environmental rules and regulations motivate profit-driven businesses to participate in green development by acting as vital tools and techniques for governments to push corporations to implement green development projects. This suggests, to a great extent, the efficacy of environmental rules and regulations in motivating businesses to preserve the environment. Resilient companies, for instance, may swiftly change their business strategy to produce eco-friendly goods. Furthermore, businesses with resilience could come up with substitutes to reduce losses brought on by resource depletion should resources run low. In the end, these projects help society to reach sustainable development. Therefore, this paper advocates that governments give top priority the application of efficient environmental protection rules and legislation to hasten the change into a more sustainable future.

The regional heterogeneity test, therefore, revealed that the NEPL's effect on businesses differs by area. The study findings showed a notably favorable correlation with eastern area enterprises, while no such notable correlation could be seen for western and central region organizations. This might be because the NEPL was more rigorously implemented in the eastern area, considering that this region is usually more economically developed than the other two and so has more room to lower environmental pollution. This study indicates, depending on this difference, more research is required to assess the efficacy of such laws and rules in various nations and settings. Different areas are affected by the laws differently because of several variables, which affects the generalizability of the results. The heterogeneity test on high-tech and non-high-tech enterprises also revealed notable variations. Several elements might explain the notable favorable effect of the NEPL for non-high-tech enterprises in relation to high-tech ones. High-tech businesses usually have more sophisticated technology and more flexibility to fit environmental rules, therefore the Law's effect may not be as strong. By contrast, non-high-tech businesses often depend more on conventional procedures and could struggle to change without major expenditure, thus the supporting policies of the law become more relevant. This difference emphasizes the importance of customized policy strategies taking into account the particular traits and capacities of various kinds of businesses.

Chinese-listed firms have raised their environmental investments to support green transformation since the Environmental Protection Law was enacted in 2015. For example, [15]has built a technology library of the most recent commercially viable energy-saving and low-carbon technologies, aiming for maximum energy efficiency across all processes and attaining a total technical energy saving of 460,000 tons of standard coal over five years. Baosteel also put money into changing a 430-cubic-meter conventional blast furnace into a hydrogen-rich carbon cycle blast furnace and on February 15, 2022, started building a 1-million-ton hydrogen-based shaft furnace low-carbon metallurgy demonstration project with a total investment of 1.89 billion yuan. These actions have improved the market competitiveness of the business as well as its carbon emissions, on the other hand, aims for carbon emissions of "peaking no later than 2030 and working to reach carbon neutrality by 2048." To boost clean electricity supply, Wanhua Chemical is investing in nuclear power, offshore wind power, onshore wind power, agrivoltaics, aquavoltaics, and other novel energy sources. These initiatives have led to the acquisition of 32.4 billion kWh of equity power depending on shareholder proportions and the attainment of complete clean energy coverage in Wanhua Chemical's industrial parks in China, therefore supporting the company's low-carbon transformation. These examples show that strict environmental rules might drive companies to raise their environmental expenditures, hence supporting green transformation and sustainable growth.

In a larger framework, this study fits with studies from many areas and countries—including Asian, European, BRICS, ASEAN, and APEC nations—where the effects of environmental rules and business sustainability have also been investigated. Research in Asia, for example, has highlighted the difficulties of enforcing environmental protection laws in fast industrializing countries, where cultural considerations, such the giving of economic growth top priority over environmental protection, may affect the pace and efficacy of policy execution. Many Asian nations have a cultural bias toward quick economic benefits, which usually conflict with the long-term character of sustainability projects.

European studies usually concentrate on how green innovation fits into current legal systems as a culture of environmental awareness and more public advocacy for sustainability motivates compliance. The European focus on corporate social responsibility (CSR) indicates a long-standing cultural dedication to environmental sustainability, which could influence companies in these areas to be more aggressive in using green technology.

Often, in BRICS nations, the necessity for economic incentives to promote green technology is combined with the function of law enforcement in encouraging corporate resilience. But cultural variations in these nations—where government systems, economic practices, and degrees of public involvement with environmental concerns differ—can affect how laws are read and applied. Cultural variations regarding government-business ties and views toward environmental control, in particular, can affect the efficacy of corporate solutions.

Studies from ASEAN nations underline the need of striking a balance between environmental sustainability and economic growth. In these areas, the significant cultural focus on community and shared responsibility could motivate businesses to include environmentally friendly practices, especially in sectors with clear effects on communities. The difficulty, therefore, is in dealing with different cultural ideas on environmental responsibility and corporate competitiveness. APEC countries provide a special viewpoint on how trade-related rules may propel cross-border sustainability projects. Cultural elements in these areas might influence how businesses see environmental rules not as a burden but as a chance for creativity and cooperation. Cultural openness to international collaboration in APEC nations should improve cross-border initiatives to address environmental issues and support green growth.

Studies on various kinds of companies, including high-tech vs conventional sectors, show that the effect of environmental regulations can range greatly depending on the sector's ability for innovation and adaptability. While conventional businesses could be more resistant because of firmly ingrained business processes and a less flexible cultural attitude to change, high-tech companies are frequently better able to embrace green technology given their culture of innovation.

The Environmental Protection Law's Role in Strengthening Enterprise Green Development Resilience

This paper also showed how the NEPL increases corporate green development resilience. The NEPL operates via four channels: strategic resources, green innovation, policy incentives, and funding dynamics. These elements enable companies to increase their knowledge and expertise to handle any market environment changes-related disturbances.

First, companies would recruit people with green consciousness who could help the company strategically green its operations as they sought to follow the NEPL. [27]back up such study results by claiming that executive environmental awareness is core to the dedication of an organization to green development since it drives businesses to create green knowledge that enables them enhance their green innovation potential and correspondingly makes them more nimble in perceiving and understanding external possibilities. These initiatives finally improve their capacity to handle any chances and dangers presented by a fast altering market environment.

Moreover, by promoting green innovation, the NEPL strengthens the resilience of company green development. This fits results by [34] indicating that environmental rules could drive companies to create. Every government is working to motivate businesses to employ green technology breakthroughs that enhance resource use efficiency and lower pollution. Building resilience requires innovation as resilient companies often experiment with new business strategies, services, or products, thereby being sufficiently nimble to respond to unanticipated chances and obstacles. Green growth by businesses is a process of growing experience and professionalism.

The study findings confirmed that significant NEPL strategies to boost corporate green development resilience include tax pressure and green subsidies. Research by [7]backs up this finding by indicating that businesses with green subsidiaries and other economic incentives tended to invest more in green projects, hence enabling them to use or create pollution control technology. This approach enables businesses with the means to handle environmental concerns like air pollution. Companies are ready to restructure their resources and fund the creation of dynamic capabilities when they see the financial rewards of certain initiatives. Tax pressure drives businesses to provide themselves with the required tools to handle different environmental protection criteria and may even push them to be proactive in handling the evolving needs of sustainable growth. This corresponds to the study results of [29], who discovered that carbon taxes might lower the emission of greenhouse gases.

By lowering financing limits and financial expenses, the NEPL encourages business green development resilience. Since their projects are government-supported and thus more likely to draw cheaper and quicker finance, those businesses involved in greening their operations can satisfy lax financing limits when the NEPL was implemented. Low financing limits and expenses allow businesses to carry out more green research initiatives or green innovation, as [14] noted. This approach increases the likelihood that companies will participate in green innovation.

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