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Impact Of Green Innovation On Business Sustainability Of Firms And The Mediating Role Of Green Intellectual Capital

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ABSTRACT

Background: The global business landscape is shifting towards sustainability due to escalating environmental concerns. This review examines the interplay between green innovation, business sustainability, and the green finance, focusing on China's listed industries.

Methods: The methodology of the paper is to involve a combination of theoretical frameworks, literature review, and hypothesis formulation to explore the relationship between business sustainability, green innovation, the green finance, and the role of green intellectual capital. Drawing upon the resource-based view and institutional theory, this paper analyzes data from heavily polluting enterprises in Shanghai and Shenzhen A-share recorded manufacturing firms from 2012 to 2023. The study explores the relationship between business sustainability applications and corporate sustainable development performance, as well as the mediating role of green innovation and institutional pressure.

Results: Findings indicate a significant positive impact of Business Sustainability application on corporate sustainable development performance, with green innovation acting as a partial intermediary. The study also highlights the role of institutional pressure in regulating these effects.

Conclusion: This review offers practical insights for fostering sustainable corporate development by synthesizing diverse scholarly articles, empirical studies, and industry reports, It provides an in-depth analysis of China's current status of green innovation and its implications for the broader economic landscape.

KeyWords: Global landscape, Environmental concerns, Sustainable practices, Green innovation, Business sustainability, Green finance, China's listed industries.

Introduction

The problems of global warming and environmental pollution are becoming more prominent in today's world. The sustainable development approach, which is based on ecological security and green concepts, is currently a path that is being jointly explored by scholars and policymakers all over the world. Additionally, how to deal with environmental challenges has become a common concern worldwide. China, the world's largest developing nation, has incorporated ecological protection and sustainable development into its long-term strategy (Syahidun, 2023; Ullah et al., 2023). China is actively responding to global environmental issues and has included them in its economic and social development guidelines. Specifically, China is working toward reaching its peak carbon dioxide emissions before 2030 and 2060. The focus areas are promoting carbon neutrality, green development, and harmonious development. Following the "dual carbon" strategic aim, pursuing sustainable development that offers economic and environmental advantages has become an unavoidable option for businesses. With the rapid growth of the digital economy, increasing numbers of companies are utilizing emerging digital technologies such as artificial intelligence and developing and promoting green and low-carbon technologies such as blockchain, cloud computing, and big data to carry out

digital transformation. At the same time, green innovation has received unprecedented attention (Cheng et al., 2023; Li et al., 2023; Shehzad, Zhang, Dost, et al., 2023).

Becoming the core substance and effective driving force of green growth, the question of how to enhance the performance of corporations in terms of sustainable development via digital technology is an academic problem worthy of current study. Scholars primarily analyze the impact mechanism from the perspectives of the supply chain. Domestic and foreign scholars have explored the conceptual connotation of organizational culture and resource orchestration believe that digital technology can promote corporate economic and environmental performance based on information processing theory (Nassani et al., 2023; Ni et al., 2023). The research on digital technology is primarily focused on the inevitable choice that can enable businesses to achieve a more advantageous position in market performance improvement and environmentally sustainable development issues. A significant number of research and conversations have been conducted on the role that the digital supply chain platform plays in influencing and affecting sustainable development performance (Mohamed, 2023; Truong & Nguyen, 2024).

Research on the impact of green innovation output or adoption of green innovation, as a strategic practice for enterprises to respond to national policies and face environmental challenges, assists enterprises in achieving a "win-win" of economic and ecological benefits. This research is conducted under the guidance of the dual carbon goals. A few studies involve the bridging role that green innovation plays between digital technology evolution perspectives, which have always been a hot focus in economic geography application and sustainable development performance. However, research on the impact of green innovation output or adoption is important for businesses to achieve sustainable development goals. According to the resource-based view (Moslehpour et al., 2023), companies can fully integrate green-related knowledge and knowledge interaction with innovation partners and establish innovation networks, information, and technical resources.

This is accomplished by enhancing the application level of digital technology economic development and organizational model evolution. Businesses can improve their green innovation capabilities, which in turn helps them obtain green core competitiveness and win growth opportunities. Through achieving sustainable development, an increasing number of economic geographers have started to pay attention to the function and effect of economic geography. Therefore, environmentally friendly innovation may play a part in transferring information between digital technology and sustainable development to ensure the high-quality growth of my country's industries and areas (Alnatsheh et al., 2023; Rana & Arya, 2024).

The objective of the research is to Investigate the link: Within the specific framework of China's listed industries, investigate the complex link between environmentally friendly innovation and the sustainability of businesses. For the most part, the research lineage has transitioned from concentrating on the meaning and qualities of green innovation itself to emphasizing the significance of external impacts. Investigate Green Intellectual Capital: Investigate the function of green intellectual capital as a mediator in turning green innovation into actionable and environmentally responsible corporate practices. The consequences of driving and the link between knowledge contacts across regions and green innovation, and then to conclude the study that is now being done on the features of inter-firm relationships. Investigate the Implications from the Green finance: Gain an understanding of how green innovation contributes to the green finance, especially concerning corporate entities in China. The twofold spillover effect, the triple bottom line, multiple driving impacts, and route dependency of green innovation are some of the research hotspots that have been identified.

Background

Green innovation is a notion that emerged as a result of the rising global environmental crisis, which has demanded a paradigm change in the operations of businesses. Using the research kinds of literature on green innovation that was published in the area of economic geography between the years 1990 and 2019 and found in the databases of the Web of Science, Companies all over the globe are reevaluating their operations to align them with the ideals of sustainability (Bhat et al., 2024). This study uses bibliometric analysis and a review of relevant literature from both domestic and international sources with the assistance of. Citespace software is designed to systematically sort out the theoretical development lineage and hot topics of green innovation research, clarify the research frontier and academic controversies, and seek a breakthrough for constructing the theoretical system of green innovation in China. This is particularly helpful in the context of China, a nation undergoing rapid economic development. It is crucial to understand the dynamics of green innovation and its implications for business sustainability (Borah et al., 2023).

Green Innovation Defined

For the same reason that innovation is the driving force behind development, green innovation is the driving force behind green transformation and high-quality development. Green innovation includes the creation and implementation of new goods. Services: Green innovation is the driving force of greening transformation and high-quality development, and green innovation can make this growth sustainable processes and technologies that are environmentally friendly. Innovation is the engine of economic growth, just as innovation drives development, contributing to sustainable development and mitigating ecological impact (Shehzad, Zhang, Latif, et al., 2023). Green innovation can make this growth sustainable. The concept of green innovation

involves several disciplines. From a management point of view, the primary emphasis is placed on the influence of industrial structural elements on the company's ability to adopt environmentally friendly initiatives and secure market competitive advantages (Abbas & Khan, 2023).

Business Sustainability

Beyond the pursuit of financial gain, business sustainability encompasses incorporating economic, social, and environmental factors into business plan formulation. Environmentally friendly innovation is a significant driving force that may help achieve high-quality development and increase natural resource use efficiency. Green innovation strategies have the potential to enhance the effectiveness of the usage of natural resources (Yuliantini et al., 2023).When it comes to discussions on green innovation and the factors that influence it, the economics community focuses on the external factors that drive green innovation, such as environmental protection policies. These factors are studied from the perspective of resource orchestration, and it was discovered that big data analysis technology could help promote the sustainable development of enterprises' market demand, technological advancement, and innovation. To ensure their continued existence, sustainable firms place a high priority on responsible corporate citizenship. According to the subject of economic geography, global local interaction has emerged as an essential component of study on environmentally friendly innovations (NAWANGSARI et al., 2023).

Evidence from China:

This section will showcase instances where green innovation has positively benefited business sustainability in China's listed sectors. These examples will be highlighted by drawing on various case studies, empirical data, and industry publications. This section will provide examples highlighting how creative tactics have made environmentally friendly activities easier to implement and positioned businesses as good environmental stewards (Pranita et al., 2023).

The findings of the baseline regression analysis of the influence of the digital economy on urban green innovation are shown in Table 1. For this study, a progressive regression processing method is utilized. Initially, the city and year fixed effects are controlled for univariate regression. Subsequently, the fixed effects are handled separately, and related control variables are included for testing. Finally, the city and year-fixed effects are controlled simultaneously for another regression test. These findings indicate that the coefficients of the digital economy on urban green innovation are all considerably positive, and the empirical test is extremely robust. This suggests that the expansion of the digital economy has, in fact, greatly boosted the rise in the amount of urban green innovation that has been produced. Digital standardized, generic, and modular technologies are being developed and disseminated inside sectors and across industries at very low prices (Evans et al., 2023).

This results in a more efficient output of innovation, and the influence of the digital economy on enabling innovation is becoming more significant. Through this process, green technology innovation, which is a technological innovation in the field of cleaner production and end-of-line governance, promotes ecological efficiency improvement and "green" economic operation. This is accomplished by reducing the needless loss of resources and eliminating pollution emissions, ultimately increasing the amount of high-quality green innovation outputs.

Testing for robustness and endogeneity

The instrumental variable of the core explanatory variable is the cross-product of the historical data representative of postal and telecommunications and the sample corresponding to the number of people who utilized the Internet on a national scale in the previous year.

This article replaces the number of urban green innovation applications with the number of authorizations as the explanatory variable, and it also replaces the digital inclusive fund cause mistakes with the number of authorizations (Maravall et al., 2023). Therefore, this paper depends on the processing approach and utilizes the number of telephones per 10,000 persons in each city this A two-way fixed effects model and robust standard errors were used for testing in the prior article; nonetheless, the potential for a two-way causal link will impact the study's findings.

Reliability and accuracy are essential

Table 1: Key Points and Methods

Points and Methods	**Description**
Context	Utilizing case studies, facts, and sector reports as inspiration.
Focus	I want to highlight some examples of green innovation that have influenced the sustainability of businesses in China's listed sectors.
Examples	This article provides examples of creative techniques that facilitate environmentally friendly behaviors and position businesses as responsible environmental stewards.

Points and Methods	**Description**
Baseline Regression Results	This study demonstrates how the Internet economy has influenced urban green innovation.
Regression Methodology	A processing approach known as progressive regression is used. First, the city and year fixed effects were controlled for univariate regression. Next, the fixed effects were controlled individually with relevant control variables. Finally, the city and year-fixed effects were held concurrently for another regression test.
Results	The powerful and favorable influence of the digital economy on urban green innovation is shown by the fact that the coefficients of the digital economy are notably positive. Digitization technologies that are standardized, generalized, and modular all help to the production of innovations that are both efficient and inexpensive. To improve ecological efficiency and increase the amount of green innovation produced, green technological innovation, which focuses on cleaner manufacturing and end-of-line governance, is implemented.
Robustness and Endogeneity Testing	As the instrumental variable for the core explanatory variable, we will be using the cross-product of historical data from the postal service and the telecommunications industry, as well as the sample corresponding to the number of people across the country who use the Internet. The number of authorizations for urban green innovation applications is the variable that is being discussed. An example of a control variable might be the number of telephones available for every 10,000 persons in each city in 1984. A two-way fixed effects model and robust standard errors are being used for testing purposes, with the possibility of two-way causal linkages being considered.

Table 1 provides a condensed depiction of the most important issues mentioned.

Business Sustainability application and sustainable development performance

According to the findings of this study, the implementation of business sustainability has the potential to assist in enhancing organizations' environmentally responsible performance. The influence that Business Sustainability has on the economic performance of organizations is characterized by this first and most essential part of the impact. When it comes to the pursuit of sustainable development, companies not only need to pay attention to the economic rewards, which will lead to an increase in the operational efficiency and economic performance of the organization, but they also need to take into account the advantages provided to the environment and society. Developing a harmonious relationship between enterprises and the environment is important to get higher market acceptance, which in turn will enhance product competitiveness. This article is a flexible source of knowledge since it discusses the performance of businesses in terms of sustainable development is a good example of this . Concerning the research carried out by they use and deploy their business sustainability resources in line with the demands that come from the outside. The subject matter in question encompasses two aspects: the enhancement of product value and, eventually, economic performance and environmental and social responsibility performance (D'Angelo et al., 2023).

It can strengthen the company's capacity to access external information, data, and resources by implementing Business Sustainability. Additionally, it helps reduce information asymmetry across many topics and enhances the enterprise's internal information flow and usage rate. To make more accurate predictions about the future, it is necessary to close the information gap between supply and demand and improve reaction capabilities. The fluctuations in supply and demand may assist in uncovering market possibilities more rapidly, enhancing decision-making levels, and manufacturing goods that follow the needs of consumers, all of which will eventually contribute to improving economic performance. Moreover, since Business Sustainability has affordances, which means it may provide various opportunities to actors, it brings some advantages (Huang et al., 2023).

To put it another way, Business Sustainability can generate a variety of effects and develop certain values, depending on the application goals of various businesses or organizations [9, companies can improve product performance, Secondly, from an internal perspective, the application of Business Sustainability helps enterprises expand the breadth and depth of internal unstructured data, that is, through the application of Business Sustainability, the standardized processing and classification integration of multi-source heterogeneous data can be achieved, eliminate data access barriers from different channels, reduce data redundancy, The use of Business Sustainability may help enhance corporate resource utilization and make industrial pollutant emissions obvious, visible, and traceable (Hamad et al., 2023). This is in relation to the influence that Business Sustainability has on environmental and social responsibility performance. The Internet of Things and cloud computing are two examples of technological applications that assist businesses in performing dynamic tracking and real-time data analysis of the dynamic flow of resources and industrial waste. These applications also help companies improve their insights and reduce unnecessary costs by accurately monitoring the consumption of resources and energy and optimizing the entire process. Necessary

resource usage and decreased pollutant dye (Arena et al., 2023). The application of Business Sustainability enables businesses to allocate energy supply intelligently, encourage recycling and utilization, improve production efficiency and resource integration efficiency, contribute to the reduction of the negative impact that enterprise production has on the environment, improve environmental governance efficiency, and promote environmental and social responsibility performance improvement. All of these benefits can be achieved simultaneously. In light of this, the following research theories are presented in this article: According to the Toward effect, the use of Business Sustainability has a large and favorable influence on sustainable development (Hamad et al., 2023).

H1a: The use of Business Sustainability has a large and favorable impact on the utilization of economic resource utilization

It has been shown that the deployment of Business Sustainability has a large and beneficial impact on the performance of environmental social responsibility.

Table 2 Hypothesis

Hypotheses	Content
H1	Business Sustainability has a large and favorable influence on sustainable development performance.
H1a	The deployment of business sustainability has a considerable and favorable impact on the performance of organizations.
H1b	Business Sustainability has a large and favorable impact on the performance of environmental and social responsibility projects.

Table 2 shows the Research Hypotheses. These tables provide a condensed depiction of the theoretical framework and research hypotheses connected to the influence that the deployment of Business Sustainability has on the performance of businesses towards sustainable development.

Business Sustainability application and green innovation

Green innovation refers to technological advancements associated with environmentally friendly processes or products. These advancements include energy conservation, alternative energy production, waste treatment, pollution prevention, and other related software and hardware innovations. Green innovation aims to adopt new or improved environmentally friendly technologies. Technology that allows for the effective usage of resources and the reduction of environmental pollution (Li et al., 2023).Following the resource-based perspective concerning the significance of regional competitiveness, Measuring Eco-innovation valuable, scarce, irreplaceable, and difficult-to-replicate technology, as well as the production of novel and competitively priced goods, knowledge and other resources, serve as the foundation for businesses to innovate and establish sustainable Environmental Innovation Research competitive advantages.

Some factors help businesses improve their original technologies, including the availability of technical resources, introducing a national-level green innovation strategy for the first time, and emphasizing public environmental investment to strengthen their research and development capacities and technological innovation capabilities. This is the age of the digital economy, and the sustainability of businesses is an important internal technical resource for enterprises. Fully absorbing and utilizing Business Sustainability resources can help improve enterprises' green innovation capabilities, create and maintain competitive advantages, and achieve sustainable development (Hao et al., 2023).

This study believes that the application of Business Sustainability can promote green innovation. First, from the perspective of information integration and sharing, unlike traditional innovation, green innovation involves highly comprehensive information such as energy conservation, pollution prevention, waste utilization, and cleaner production. The application of enterprise Business Sustainability can break down information barriers, realize the collection, integration and sharing of green, low-carbon, and environmental protection-related information, help enterprises fully grasp the information required for green innovation, and provide technical support for the smooth transmission and efficient sharing of information, reduce green innovation risks and promote green innovation output; secondly, from the perspective of knowledge integration, green innovation, as an innovation activity under interdisciplinary subjects, covers knowledge in multiple technical fields, and the application of Business Sustainability helps to expand enterprises The breadth and depth of external knowledge search help enterprises break through existing technology structures and domain restrictions, search and find new technologies and new knowledge more quickly and efficiently, thereby obtaining more cutting-edge green innovation knowledge and breaking the path of enterprises to past technological trajectories. Dependence enables green knowledge integration, knowledge base reconstruction, and updating in different fields, promoting corporate green innovation. Therefore, this article puts forward the following research hypothesis: H2: The application of Business Sustainability has a significant positive effect on green innovation.

Table 3 Key points and Description

Key Points	Description
Definition of Green Innovation	Green innovation involves technological advancements in environmentally friendly processes or products, encompassing energy conservation, alternative energy production, waste treatment, and pollution prevention (Yudianto & Yuliawati, 2024). It aims to adopt new or improved technologies for efficient resource utilization and reduced environmental impact (Xu & Dong, 2023).
Resource-Based View Perspective	Valuable, scarce, irreplaceable, and difficult-to-replicate technology, knowledge, and other resources are foundational for enterprises to innovate and establish sustainable competitive advantages [(Rana & Arya, 2024)]. Technical resources, in particular, play a key role in enhancing original technologies, research and development (R&D) capabilities, and technological innovation capabilities (Rodríguez-Félix et al., 2022).
Role of Business Sustainability in Green Innovation	In the digital economy era, Business Sustainability is a crucial internal technical resource for enterprises. Full absorption and utilization of Business Sustainability resources can enhance green innovation capabilities, establish and maintain competitive advantages, and foster sustainable development (Rodríguez-Félix et al., 2022; Ullah et al., 2023).
Perspectives on the Application of Business Sustainability	- **Information Integration and Sharing:** Business Sustainability can break down information barriers, enabling the collection, integration, and sharing of comprehensive green, low-carbon, and environmental protection-related information. This facilitates informed decision-making in green innovation, reduces risks, and promotes output (Yudianto & Yuliawati, 2024).

Table 3 concisely represents the key points discussing the relationship between Business Sustainability and Green Innovation, along with the formulated research hypothesis.

The intermediary role of green innovation

According to the resource-based approach, businesses can enhance their capabilities by making full use of the resources at their disposal. This will assist in the preservation of competitive advantages and the achievement of sustainable development. To put it another way, the capabilities of the business are the source of both growth and sustainable development for the company, and the characteristics of the enterprise are the source of the capabilities. The resources (Wu et al., 2023). Based on the findings of this research, it is believed that integrating digital resources and skills for green technology innovation is the key to encouraging corporate development developing and retaining competitive advantages, and green innovation plays an essential role in the applications of Business Sustainability. It also acts as a mediator between the performance of sustainable development and resource utilization (Huang et al., 2023).

This article believes that environmentally conscious innovation has the potential to enhance the improvement of corporations' sustainable development performance favorably. When viewed from the "resources-capabilities-growth" perspective of the resource-based view, green innovation, in terms of its impact on corporate economic performance, represents the company's key technological innovation capabilities. Additionally, green innovation has the potential to provide sources and motivation for corporate growth, which ultimately contributes to an improvement in corporate economic performance. To begin, businesses can lower the amount of material input in manufacturing and other processes, achieve intense output, and cut expenses . However, they may also enhance their production capacity by using new or better production techniques throughout the implementation of green innovation. Improve the input-output rate and promote economic performance; secondly, by implementing green innovation, enterprises can establish an environmentally friendly image to the public, gain more green recognition and capital support, accumulate a good social reputation, and not only obtain environmental premiums and new profit points, and compared with competitors, it can form differentiated advantages, help companies win better market performance, and then improve economic performance. Enterprises may also avoid opposition from external stakeholders and the expense of environmental infractions by adopting green innovation (Chen et al., 2023).

Additionally, this allows them to cut extra economic expenditures, which ultimately leads to an improvement in the corporation's financial performance. From the perspective of the influence on environmental and social responsibility performance, the application of green innovation by businesses may contribute to reducing environmental hazards across the whole process (Xu & Dong, 2023). To begin, in terms of source prevention, companies engage in green innovation, which includes using alternative energy, wind energy, solar energy, and other forms of energy that are favorable to the environment. This is done to avoid the emission of greenhouse gases and other pollutants from the source. Second, concerning the management of the production process, on the one hand, energy-saving technologies are utilized to encourage the circulation of raw materials and process systems, enhance resource utilization, and decrease waste in intermediate processes such as industrial production, thereby alleviating resource constraints, on the other hand, the production process is one of the

most important aspects of the management of the production process. As part of the manufacturing process, any pollutants produced throughout the process are broken down and digested to achieve clean production. Thirdly, concerning end-of-pipe treatment, businesses use waste treatment and other technologies to improve the safe disposal of industrial waste that is polluting after the manufacturing process, to meet end-of-line emissions standards in the manufacturing process, and to lessen the number of environmental loads (Chen et al., 2023).

Additionally, through innovative products, businesses incorporate environmental protection concepts into their products and extend their corporate responsibilities to consumer terminals. This ensures that products are environmentally friendly throughout their life cycles, demonstrates a corporate image and mission willing to take on environmental responsibilities and be ecologically friendly, and promotes improving the corporate environment's social responsibility performance. In light of this, the following study theories are presented in this specific article:

Table 4: Key Points from Resource-Based View

Points
The resource-based approach asserts that businesses can improve their capabilities by making full use of the available resources.
The firm's capabilities are the source of both growth and sustainable development for the entrepreneurial enterprise.
Capabilities are derived from the resources available to the company

Table 5: Key Points on Green Innovation and Sustainable Development

Points
The integration of digital resources and the capacity for innovation in environmentally friendly technology is very necessary to foster the development of businesses and preserve their competitive advantages.
Innovation that is environmentally friendly acts as a mediator between the use of Business Sustainability and the performance of sustainable development.

These tables provide a condensed portrayal of the most important elements of the resource-based approach and green innovation's role in fostering sustainable development. Within the context of the study hypothesis, the beneficial influence of environmentally friendly innovation on economic performance and environmental and social responsibility performance is emphasized.

The Green finance and Its Relevance to Firms

Green finance Concept

The green finance's idea revolves around the sustainable development and usage of ocean resources. The green finance incorporates commercial, research, and innovation activities to strike a balance between economic growth, the preservation of the environment, and the community's health and prosperity. Green finance (BE) is a concept that tries to properly manage water resources as a method of economic development that is both forward-looking and sustainable. The phrase "green finance" refers to the green finance itself. Responsible utilization of oceans reports emerging seas and coastal areas, which is at the heart of this initiative, which focuses on sustainable development and green economics (Germond-Duret et al., 2023).

It seeks to balance the economy's growth, which is an extension of the green economy concept, and the environmental component of economic activity. This is done in awareness of the critical relevance of marine ecosystems, particularly seas and oceans. And the protection of the environment. The sustainable " economy that leads to human well-being management of fisheries, the guarantee of renewable energy sources from the ocean, the development of responsible enhances social justice coastal and marine tourism industries and activities based on marine, the exploration of marine biotechnology for a variety of applications, the promotion of innovation in marine-related technologies perspective of the sustainable economic development in different countries or geographical areas, and the implementation of efficient waste management to combat marine pollution are some of the key principles. Several other classifications have evolved in response to the green finance concept, which emphasizes the connectivity between economic development, environmental well-being, and social (Setiyowati et al., 2023). The goal of the green finance is to use the phrase derived from the conceptual core of this approach to safeguard the health of our oceans while simultaneously fostering the development of enterprises and activities based on marine biodiversity and resilience. Specifically, this is achieved by including four fundamental ideas within the overall structure. This approach follows the objectives that attempt to accomplish three primary global sustainability objectives. These objectives recognize the

significant role that oceans play in regulating climate, the monitoring and control of biotechnology, the preservation of biodiversity, and the overall well-being of our planet (Axon & Collier, 2023).

The Mediating Role of Green Intellectual Capital:

Green Intellectual Capital Defined

In this era of the knowledge economy, green intellectual capital encompasses the knowledge that has been expanding on a global scale, as well as the skills, norms, and beliefs of an organization, as well as innovations that are related to learning about the concept of sustainability in business and sustainable practices within an organization. This part will provide a detailed description of green intellectual capital and knowledge of environmental stewardship and innovation capacities (Ullah et al., 2023).

Mediation Mechanism

This part aims to investigate the complex processes at play and how green intellectual capital operates as a mediator between green innovation resource consumption and business sustainability integration of environmental principles into organizational management. Detailed information on the procedures that will be supplied: The greater the number of organizations, the more wide the knowledge source is, making it easier to translate creative ideas into practical and sustainable practices successfully (Roos et al., 2023).

Conclusion

Reviewing the results in a nutshell Following the developments in research and the trends in development, this study will emphasize Green innovation plays a pivotal role in shaping business sustainability green innovation investment from different positions so that green innovation can comply with policies to the greatest extent possible the combination of green innovation and economic geography research paradigm, which is a promising research direction. In addition to contributing to the green finance of companies in China, logic and market logic are also important. Those not responsible for bearing the expenses often get the economic gains brought about by this negative externality. This tension between policy and market logic has significantly influenced the strategic choices and decisions of companies' processes that drive the effective implementation of green intellectual capital, and the debate on the role of green intellectual capital as a mediator will give useful insights into the situation. It is essential to research and investigate the best balancing point and degree of green innovation techniques on the market. The paper concludes by stating that economic geographers should pay attention to the many expressions of policy to provide practical assistance for firms, politicians, and scholars interested in encouraging cognitive closeness. Inquire about it. The scope of green innovation differs from that of ecologically green innovation and sustainable innovation in several dimensions, and it is important to categorize these innovations to research responsible practices within the business sector.

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