

# Lessons from Literature to Comprehend the Nexus of Green Innovation, Green Entrepreneurial Orientation, and Sustainable Business Performance

Tengku Firli Musfar<sup>1</sup>, Zulkarnain<sup>2</sup>, Alvi Furwanti Alwie<sup>3</sup> and Gatot Wijayanto<sup>4</sup>

## **Abstract**

*This article explores the relationship between Green Entrepreneurial Orientation, Green Innovation, and Sustainable Business Performance. It examines the influence of these variables on each other and their interactions. The study provides a framework for understanding and applying these principles. It confirms the importance of Green Entrepreneurial Orientation in business practice and highlights the need for integrating these concepts in research. The positive impact of Green Innovation on Sustainable Business Performance underscores the need for further research and more accurate measurement methodologies.*

**Keywords:** *Green Innovation, Business Practice, Concepts, Green, Business*

## **INTRODUCTION**

Green innovation, green entrepreneurial orientation, and sustainable business performance are the fundamental cornerstones of the emerging field of green entrepreneurship. According to its definition, Green Entrepreneurial Orientation serves as a compass that points new and developing companies in the direction of environmental awareness and expansion. This involves adopting a mentality that reassesses conventional corporate methods and places a greater focus on actions that promote social cohesion and the environment. These qualities end up serving as these companies' distinctive attributes, setting them apart from traditional enterprises (Li et al., 2022). Furthermore, Green Innovation serves as a link between this perspective and quantifiable, tangible outcomes in terms of corporate success. Businesses are responding to the global push for sustainable practices by supporting innovation that puts environmental friendliness first. They are also discovering new ways to achieve operational excellence and appeal to consumers. Sustainable Business Performance is the outcome of these two components working together: GEO and Green Innovation. These performance indicators span a wider spectrum of success, including ecological balance, social responsibility, and long-term survival in a market context that is always changing and ecologically conscientious, going beyond simple profitability.

In the operations of Small and Medium Enterprises (SMEs), green innovation is a powerful tactical force. This strengthens the viewpoint of a resource-based outlook and demonstrates their dedication to sustainable practices (Muangmee et al., 2021). According to this viewpoint, a company's internal resources—like green innovation—are essential to gaining a competitive edge. SMEs can gain a competitive edge that sets them apart in the market and facilitates a more robust and sustainable growth trajectory by incorporating innovative practices linked to environmental sustainability in an ever-evolving business landscape. Finally, Sustainable Business Performance refers to a business's ability to achieve long-term financial success while also contributing to social and environmental well-being (Tjahjadi et al., 2020). Understanding the importance of the relationship between Green Entrepreneurial Orientation, Green Innovation, and Sustainable Business Performance is essential for businesses that wish to pursue environmental and sustainable development. By having a Green Entrepreneurial Orientation, businesses can develop Green Innovation which can lead to Sustainable Business

---

<sup>1</sup> Faculty of Economics and Business, University of Riau, Indonesia E-mail: [tengkufirlimusfar@lecturer.unri.ac.id](mailto:tengkufirlimusfar@lecturer.unri.ac.id), (Corresponding Author)

<sup>2</sup> Faculty of Economics and Business, University of Riau, Indonesia E-mail: [zulkarnain.fe@lecturer.unri.ac.id](mailto:zulkarnain.fe@lecturer.unri.ac.id)

<sup>3</sup> Faculty of Economics and Business, University of Riau, Indonesia E-mail: [alvi.furwanti@lecturer.unri.ac.id](mailto:alvi.furwanti@lecturer.unri.ac.id)

<sup>4</sup> Faculty of Economics and Business, University of Riau, Indonesia E-mail: [gatot.wijayanto@lecturer.unri.ac.id](mailto:gatot.wijayanto@lecturer.unri.ac.id)

Performance. This can not only benefit businesses financially but also contribute to social and environmental well-being.

## **METHODS, DATA, AND ANALYSIS**

In this research, a comprehensive analysis of 25 articles was carried out. The use of methods, data and analysis in this literature study is carried out through the following steps:

**Literature Search:** Articles, journals, and other publications were collected from various sources, including major databases such as Google Scholar, Scopus, and Emerald Insight. Searches use keywords such as 'Green Entrepreneurial Orientation,' 'Green Innovation,' and 'Sustainable Business Performance,' along with various combinations of these keywords.

**Inclusion and Exclusion Criteria:** The studies conducted in this review adhered to certain criteria:

Articles published in registered international journals.

Published in the 2014-2023 period.

Mainly focuses on one or a combination of Green Entrepreneurial Orientation, Green Innovation, and Sustainable Business Performance.

**Review Process:** Once the literature is collected, each source goes through a comprehensive review to understand the findings, methodology, and research context. This step allows identification of major themes, patterns, and relationships between variables that frequently appear in the literature.

**Thematic Analysis:** The reviewed literature is then analyzed using a thematic approach. Main themes and subthemes were identified based on their frequency and relevance in the context of the literature review. This approach ensures a coherent and structured synthesis of the literature, opening up insights into the connections between Green Entrepreneurial Orientation, Green Innovation, and Sustainable Business Performance.

## **RESULTS**

### **Green Entrepreneurial Orientation**

There are various views about green entrepreneurial orientation, but these views have similarities in the benefits obtained by organizations that are committed to this green entrepreneurial orientation. Green entrepreneurial orientation is a combination of initiative and environmental orientation. The concept of green entrepreneurial orientation is based on the foundations of green entrepreneurial theory and entrepreneurial orientation theory (Guo et al., 2020). Green entrepreneurial orientation is an initiative that follows the triple bottom line principle aimed at developing the Company (Muangmee et al., 2021). The term green entrepreneurial orientation is defined as a combination of organizational strategies that include the company's strategic direction, management policies and company behavior to achieve sustainable competitive advantage (Jiang et al., 2018). Green entrepreneurial orientation refers to a company-level proactive strategic tendency to identify and understand environmentally friendly business opportunities based on comprehensive consideration of risks and benefits (Guo et al., 2020). Industrial mining currently has a relatively broad trend of concern that helps green entrepreneurial orientation initiate company actions to participate in protecting the environment, encouraging innovation and facilitating entrepreneurial initiatives. The idea of green entrepreneurial orientation acts as a bridge to innovation based on sustainable development for companies and is committed to playing an important role in providing green innovation opportunities, maintaining social responsibility policies and enhancing competitive advantages.

Some researchers argue that green entrepreneurial orientation includes two aspects: environmental orientation and social and innovation orientation (Guo et al., 2020). Green entrepreneurial orientation consists of: social orientation and innovation. In particular, as a strategic step, green entrepreneurial orientation can facilitate the production of ecologically innovative products that contribute to increasing sustainable companies (Muangmee et al., 2021) Therefore, the main goal of green entrepreneurial orientation is to promote sustainable production processes and the introduction of environmentally friendly products and services (Muangmee et al., 2021). Green entrepreneurial orientation, as a form of environmental entrepreneurship, recognizes it as an important skill for small businesses and gives them broader responsibilities. Environmental focus refers to the manager/owner's passion for the environment and the company's pursuit of environmental and business goals, inspiration, innovation, aggressive risk and planning, and rapid implementation of environmental policies and

plans, thereby improving the company's competitive position and business results. Companies that adopt a green entrepreneurial orientation can promote superior environmental protection through several mechanisms. First, addressing environmental problems by developing environmentally friendly products and services through green products and services. Second, reducing emissions of harmful substances, improving workplace safety and health. Third, focusing on consumer safety and health and improving social welfare (Guo et al., 2020).

Similarly, there are three ways in which businesses can enhance their financial performance by embracing green entrepreneurship. First, advancements in environmentally friendly products and processes deal with energy resources or expenses. Second, the business may profit from having an active role and searching for green prospects. Third, the readiness to commit substantial sums of money to a company that makes odd profits or losses. An emphasis on green entrepreneurship often enhances social, environmental, and economic performance. Various organizations, including new businesses, social enterprises, government agencies, small and medium-sized businesses, and local or international corporations, can adopt a green entrepreneurial attitude. Table 1 below illustrates differing perspectives about the definition of green entrepreneurial orientation:

**Table 1.** Definition of Green Entrepreneurial Orientation (GEO)

Author (Year)	Definition of Green Entrepreneurial Orientation(GEO)
Guo et al., 2020	Green Entrepreneurial Orientation is an organizational action that refers to a proactive strategic tendency at the corporate level to identify and understand environmentally friendly business opportunities based on comprehensive consideration of risks and benefits.
Pratono et al., 2019	Green Entrepreneurial Orientation is a form of organizational contribution to increasing sustainable competitive advantage.
Wenbio et al., 2018	Green Entrepreneurial Orientation is a picture of dynamic capabilities, can exploit new ideas and encourage innovation, shows a tendency to seize potential opportunities, and take risks in transforming a social economy into a social ecological economy.
Jiang et al., 2018	Green Entrepreneurial Orientation is an organizational action based on three sets of organizational processes: green innovation, proactiveness, and openness to risk and vulnerability.
Yu-Hsien Lin and Hsin-Chung Chen 2018	Green Entrepreneurial Orientation is an organizational action that consists of two components, namely proactiveness and risk taking. These components are used on a unidimensional scale to measure GEO, which is defined as a strategic approach to an organization's environment.
Melay et al., 2017	Green Entrepreneurial Orientation is a profitable and innovative entrepreneurial activity, which seeks to positively exert its influence on society, the economy and the environment.
Covin & Miller, 2014	Green Entrepreneurial Orientation is an action consisting of a company's behavior in risk taking, innovativeness, competitive aggressiveness, and autonomy.
Gibbs and O'Neil 2012	Green Entrepreneurial Orientation is one action that occupies a sustainable environmental niche that offers lessons for policymakers in any transition to a green economy. Encouraging and facilitating interactions between multi-actors, including green businesses, investors, policy makers and so on, is recommended as a policy approach to drive sustainability transitions.
Cohen and Win 2007	Green Entrepreneurial Orientation are organizational actions that not only provide profits and jobs, but also have an additional requirement: innovation resulting from continuous entrepreneurial activity.
Musfar, T.F 2024	Green entrepreneurial orientation is a commitment to start a business based on environmental support, by consistently innovating to achieve sustainable business performance.

The input, method, and goals of green entrepreneurial orientation are the three key components that may be understood from the various definitions of the term that have been presented above. Environmental predisposition (partiality), dedication, and initiative are the inputs for a green entrepreneurial approach. The process of green entrepreneurial orientation involves creative business management practices that consider the environment. Achieving sustainable business performance is the aim of green entrepreneurial orientation, in

the meantime. Consequently, the definition can be summarized as follows: green entrepreneurial orientation is the dedication to launch a company on the basis of environmental support and continuously innovate to attain sustainable commercial performance. The breadth of green entrepreneurial approach, however, which can be utilized as an.

Referring to research conducted by Muangmee et al., 2021; Asadi et al., 2020; Chen, 2008, there are several indicators that can describe greenentrepreneurial orientation, namely as follows:

Using fewer or non-polluting/toxic materials. Has a strong inclination for high-risk green product development projects that have the opportunity for very high returns.

Has a strong emphasis on environmentally friendly research and development, technological leadership and innovation.

Has a tendency to initiate environmentally friendly actions for competition.

Has a tendency to be a market leader, always being the first to introduce environmentally friendly products, services or technology.

Meanwhile, based on a systematic literature review conducted by Golsevid (Tze San et al., 2022), some green indicatorsentrepreneurial **orientation, as follows:**

Green risk taking.

Green Innovativeness.

Green Pro-activeness.

Green Opportunity-orientation.

### **Green Innovation**

Green Innovation was first introduced in the late 1990s, by proposing a change from existing production technology to the discovery of innovative products and processes taking into account environmental regulations as well as sustainable economic, environmental and social considerations, with the aim of long-term production and sustainable industrial development. Sustainable (Tantayanubutr & Panjakajornsak, 2017). Green innovation is very important in overcoming environmental challenges such as climate change, resource depletion, pollution and loss of biodiversity. Green innovation offers opportunities to create more sustainable and resilient societies, encourage economic growth, and improve societal and individual well-being. However, green innovation also faces challenges such as technological barriers, financial constraints, policy and regulatory frameworks, market barriers, and social and cultural factors. Addressing these challenges requires collaborative efforts between governments, businesses, academia, civil society and individuals to foster an environment conducive to green innovation and promote the adoption of sustainable practices on a global scale.

Green innovation defined as innovations related to environmentally friendly products or processes, including innovations in technologies involved in energy saving, pollution prevention, waste recycling, environmentally friendly product design, or corporate environmental management (Ullah & Danish, 2020). Green innovation emphasizes the importance of innovation as a response to environmental problems (Tantayanubutr & Panjakajornsak, 2017). Green innovation is one of the most significant environmental strategies, involving transformations in production procedures, including reduction of resource consumption, prevention of pollution, and adoption of environmental management systems in business operations (Asadi et al., 2020). Green innovation focuses on reducing waste and preventing pollution, as well as adopting systems that focus on environmental management (Peris et al., 2020). Green innovation can be seen from two subtopics: green product innovation and green process innovation. A company can take advantage of all these green innovations and realize all its benefits only when it is ready for all its aspects(Meidute-Kavaliauskiene et al., 2021). Green innovation improves economic performance through the creation of new products, new markets, use of energy and raw materials, as well as the efficiency of superior products with competitive advantages, while still paying attention to environmental impacts. Governments, businesses and individuals all have a role to play in

promoting and adopting green innovation. Governments can provide incentives and regulations to encourage this innovation through the development and adoption of environmentally friendly technologies, while businesses can invest in research and development, and individuals can make conscious choices in their daily lives to reduce their environmental impact. Various opinions about the definition green innovation can be seen in table 2 below:

**Table 2 Definition of Green Innovation (GI)**

Author (Year)	Green's definition Innovation(GI)
Ullah et al., 2020	Green innovation defined as innovations related to environmentally friendly products or processes, including innovations in technologies involved in energy saving, pollution prevention, waste recycling, environmentally friendly product design, or corporate environmental management
Asadi et al., 2020	Green innovation is one of the most significant environmental strategies, involving transformations in production procedures, including reducing resource consumption, preventing pollution, and adopting environmental management systems in business operations.
García-Granero et al., 2018; Huang and Li., 2017	Green innovation can include process, product and organizational level innovations. Product innovation refers to the production of new or modified products or services, using materials and product designs that do not negatively impact the environment
Tantayanubutr & Panjakajornsak, 2017.	Green innovation emphasizes the importance of innovation as a response to environmental problems
Meidute-Kavaliauskiene et al., 2021	Green innovation can be seen from two subtopics: green product innovation and green process innovation. A company can take advantage of all these green innovations and realize all its benefits only when it is ready for all its aspects.
Musfar, TF 2024	Green innovation is an innovation that focuses on environmentally friendly products and processes, with the aim of saving energy, preventing pollution and reducing waste

From several definitions in table 2 above, it can be concluded that it is important in responding to environmental problems, is a significant environmental strategy in the transformation of production procedures, and allows companies to achieve competitive advantage by paying attention to environmental impacts.

Green innovation can include innovation in products or green product innovation and innovation in processes at the organizational level or green process innovation(Asadi et al., 2020; García-Granero et al., 2018; Huang et al., 2014; Muangmee et al., 2021; Ullah & Danish, 2020).Green product innovation increases consumer demand and provides good benefits for consumers. These innovations also increase productivity, thereby offsetting environmental costs. Achieving success in new products by implementing green innovation requires the support of all parties, especially organizational commitment to efforts to preserve the natural environment. Product innovation refers to the production of new or modified products or services, using materials and product designs that do not have a negative impact on the environment (García-Granero et al., 2018; Huang et al., 2014).

Meanwhile Green process innovation refers to updating production processes that have been implemented previously, with the aim of reducing environmental impacts, reducing costs, improving the quality of products or services and improving techniques into additional supporting activities.(García-Granero et al., 2018). This innovation refers to new routine activities that change significantly, including business models, methods and actions that change corporate practices, relationships and decisions.(García-Granero et al., 2018).

The green innovation dimension involves two main aspects, namely innovation in products (green product innovation) and innovation in processes (green process innovation).

Green product innovation relates to the development of new or modified products or services using materials and product designs that do not have a negative impact on the environment. This innovation has a positive

impact on consumer demand and provides good benefits for consumers. Apart from that, green product innovation can also increase company productivity.

Green process innovation related to updating production processes that have been previously implemented with the aim of reducing environmental impacts, reducing costs, improving product or service quality, and increasing the company's operational efficiency. These innovations involve significant changes in corporate practices, relationships, and decisions, including business models and methods.

These two types of innovation support each other in achieving the success of new products by implementing green innovation. To achieve maximum results, organizational commitment and support from all parties is needed in protecting and preserving the natural environment.

Referring to research that has been carried out (Du & Wang, 2022), there are several indicators that can describe green innovation, namely as follows:

Green product innovation

Choose raw materials for products from companies that produce little pollution.

Choose materials for that product from energy-efficient companies.

The products produced use few raw materials.

Consider whether the resulting product is easy to recycle, reuse and decompose.

Green process innovation

The production process effectively reduces the discharge of hazardous materials or waste.

The production process recycles waste and emissions allowing them to be disposed of and reused.

The product process uses minimal water and energy consumption.

The production process reduces the use of raw materials

Meanwhile, if we refer to research conducted by Asadi et al., (2020); Chen (2008), indicators that can describe green innovation, namely as follows:

Using fewer or non-polluting/toxic materials.

Improve environmentally friendly packaging for existing and new products.

Recover end-of-life products and recycle them.

Using eco-friendly labeling.

### **Sustainable Business Performance**

*Sustainable business performance pay attention to the importance of the economy, society and the environment as dimensions of company performance (Asadi et al., 2020). These three dimensions from a small company perspective are critical for innovation and sustainable business performance (Asadi et al., 2020). In line with this, Sustainable business performance shows the importance of financial performance, social welfare and environmental quality in the welfare of the general public (Muangmee et al., 2021; Tan et al., 2022). However, researchers argue that companies focus more on economic elements compared to social and environmental ones (Asadi et al., 2020).*

Some researchers try to maintain a balance between economic and social on the one hand (Haffar & Searcy, 2017) and the economy and environment on the other (Susanto, 2019). For successful business operations, all components have an important role in successful business performance (Fernando et al., 2019). A number of studies show that from an economic perspective, implementing environmentally friendly strategies improves a company's market position and improves financial performance. The impact of green strategies can be observed at the company level as well as on financial, customer, supplier and government indices (Asadi et al., 2020). Sustainable business performance is the achievement of the organization's economic, social and environmental performance (Tze San et al., 2022). Various opinions about the definition Sustainable Business Performance can be seen in table 3 below:

**Table 3 Definitions Sustainable Business Performance (SBP)**

<b>Author (Year)</b>	<b>Definition Sustainable Business Performance (SBP)</b>
Asadi et al., 2020	Sustainable business performance pay attention to the importance of the economy, society and the environment as dimensions of company performance
Tanwir et al., 2020; Shen et al., 2017	Sustainable Business Performance shows the importance of financial performance, social welfare, and environmental quality in the welfare of the general public
Fernando et al., 2019	Sustainable Business Performance indicates that All components (economic, social and environmental) have an important role in successful business performance.
Susanto et al., 2019; Haffar and Searcy 2017	Sustainable Business Performance maintaining a balance between economic and social on the one hand and economic and environmental on the other.
Tze San et al., 2022	Sustainable business performance is the achievement of the organization's economic, social and environmental performance
Musfar, T.F 2024	Sustainable business performance is an approach that measures the success of company performance by paying attention to the balance of three important dimensions, namely economic, social and environmental performance.

Empirical evidence indicates that the overall well-being of a society is significantly influenced by financial performance, social welfare, and environmental quality. For businesses looking to achieve innovation and long-term business success, this is extremely important. As a result, economic, social, and environmental performance must all be included in the measurement of an organization's success.

The dimensions of Sustainable Business Performance include economic, social and environmental. These three dimensions are interrelated and must be integrated in efforts to achieve sustainability in a business context (Asadi et al., 2020; Haffar & Searcy, 2017; Muangmee et al., 2021; Susanto, 2019; Tze San et al., 2022). Here is a brief explanation of each dimension:

**Economic dimension:** This dimension is concerned with the business's finances and economics. Measuring financial performance includes calculating revenue, profitability, sales growth, and the effective use of available funds. This factor highlights how crucial it is to manage financial risks and produce sustained profitability.

**Social dimension:** This refers to how the business interacts with its various constituencies, such as its workers, the local community, its customers, and other linked parties. The emphasis is on justice, social welfare, and the beneficial effects that businesses have on society. Businesses are supposed to contribute to the growth of the community, maintain good relationships with stakeholders, improve the quality of life for their employees, and provide respectable jobs.

**Environmental dimension:** This aspect pertains to how the business affects the environment. This includes waste management, efficient energy use, pollution emission reduction, sustainable resource management, and environmental protection. The objective is to address climate change, protect biodiversity, and reduce the company's adverse environmental effects.

In reality, businesses that are effective in attaining sustainable business performance will take these three factors into account in a balanced way. They will engage in commercial endeavors that uphold environmental sustainability, produce profits in a sustainable manner, and benefit society.

This research synthesizes several studies, including research by Muangmee et al., 2021; Asadi et al., 2020; Cheah et al., 2019; Wang, 2019; Ramanathan, 2018; Li, 2014 to get Understanding sustainable business performance in micro, small and medium companies can be done by understanding the following indicators:

Economic Performance

Reduce costs for energy consumption.

Increased capacity utilization.

Reduced costs for waste processing.

Reduced costs due to sanctions due to environmental damage

#### Social Performance

Customer satisfaction has increased over the last 3 years.

Customer motivation has increased over the last 3 years.

Serve more beneficiaries (less fortunate people) or solve social problems.

Provide more social or environmentally friendly services in the community.

#### Environmental Performance

Achieve appreciation (certification, media coverage, recognition) related to the environment.

Average participation in protecting the environment overall has increased over the past five years.

Our organization's resource consumption, for example water, electricity and gas, has decreased over the past 3 years.

Comply with environmental regulations (carbon dioxide emissions, waste disposal, etc.).

Increased environmental compliance.

## **DISCUSSION**

### **The Relationship between Green Entrepreneurial Orientation and Sustainable Business Performance**

Studies show that green entrepreneurial orientation has an important role in realizing sustainable business performance: environmental, economic and social performance of organizations (Asadi et al., 2020; Jiang et al., 2018). Manufacturers in developing countries are still grappling with severe environmental challenges and are looking for green entrepreneurship initiatives that can significantly provide solutions to these anthropogenic effects. (Ize San et al., 2022). Because the decision making process is related to the cognitive process, the cognitive level of managers greatly influences decision making. Green entrepreneurial orientation is a cognitive choice of a company's top managers and is considered an important strategic decision for the company's sustainable development (Pratono et al., 2019). Most of the available literature has concluded that green entrepreneurial orientation positively influences sustainable business performance.

Green entrepreneurial orientation is a behavioral tendency and strategic posture that integrates entrepreneurial orientation with environmentally friendly value creation (Jiang et al., 2018), with a focus on corporate strategic trends to achieve economic, environmental and social performance. Existing literature focuses on the relationship between green entrepreneurial orientation and financial performance, environmental performance, and social performance. Besides useful studies about green entrepreneurial orientation and sustainable business performance (Magaji et al., 2017) shows that the innovative, pioneering, risk-taking and aggressively competitive characteristics of green entrepreneurial orientation of small manufacturing businesses in Nigeria have a positive impact on financial performance (Ye et al., 2022) concluded that green entrepreneurial orientation such as innovative, proactive, environmental and social orientation of companies will lead them to adopt practices that are more socially responsible and bring benefits to society. Several studies also focus on the balance of green entrepreneurial orientation on economic and environmental performance, as well as environmentally and socially responsible performance. For example, research by Habib et al. (2020) concluded that green entrepreneurial orientation has a positive effect on economic performance and environmental performance. Embedding socially responsible activities in corporate strategy helps companies to play the role of green entrepreneurial orientation to achieve social responsibility performance and environmental performance (Kraus



et al., 2020). The results of research on 269 manufacturing companies in Malaysia show the significant influence of green entrepreneurial orientation on sustainable business performance (Baig & Yadegaridehkordi, 2023).

Theoretically, green entrepreneurial orientation helps encourage increased sustainable business performance in small-scale businesses. Based on the conclusions above, we can derive an interesting transformation logic, green entrepreneurial orientation provides small-scale businesses with dynamic capabilities that enable these companies to explore, identify, and evaluate resources that are closely related to market failure, provide strategic direction for companies to achieve economic benefits, environmental benefits, and social welfare. It is clear that companies that have a green entrepreneurial orientation find a balance between the three and provide valuable resources to achieve harmony in economic, environmental and social performance. (Khan et al., 2020). Organizations that make green entrepreneurial orientation a commitment will be better able to respond to the external environment.

An emphasis on green entrepreneurship can motivate enterprises to make the voluntary and proactive transition to pro-sustainability ventures. Businesses do not require the motivating forces of stakeholder pressure and governmental laws if a willingness to be pro-sustainable emerges. So significant is the importance of green entrepreneurial attitude that it has been utilized as a precursor in multiple research. This makes sense given the nature of green entrepreneurial orientation, which is the beginning, dedication, and first steps toward operating an eco-friendly company. Specifically, several research indicate that having a green entrepreneurial mindset is crucial for improving social and financial outcomes as well as reducing negative effects on the environment. Ultimately, adopting a green entrepreneurial approach can yield competitive benefits and impact social, economic, and environmental outcomes—a concept known as attaining sustainable corporate performance.

### **The relationship between Green Entrepreneurial Orientation and Green Innovation**

Several studies have used green entrepreneurial orientation as a precursor to examine its impact on the development of green innovation (Guo et al., 2020). Initiatives to promote green entrepreneurial orientation, including green innovation, proactive opportunity taking, and risk-taking behavior. This includes green innovation, the foresight to capture potential opportunities and risks helping companies have a positive impact on their profits (Jiang et al., 2018). Small companies oriented towards green entrepreneurship promote green innovation by trying to coordinate external environmental resources to innovate environmental performance (Makhloufi et al., 2021). Organizations that make green entrepreneurial orientation a commitment will be better able to respond to the external environment. As an idea, Green entrepreneurial orientation acts as a bridge for sustainability-based innovations for business and is committed to an important role in achieving sustainable business performance.

### **The relationship between Green Innovation and Sustainable Business Performance**

Green innovation directly influences operational performance which leads to the company's economic success (Asadi et al., 2020). In addition, green innovation practices reduce energy consumption costs and reduce waste which has a positive impact on organizational costs (Muangmee et al., 2021). The beneficial effect of green innovation on sustainable business performance is due to reduced waste and costs. The influence of green innovation on a company can be assessed from financial, supplier, customer and government levels and indices (Asadi et al., 2020).

In addition to addressing environmental issues, green innovation is critical in attracting and retaining staff, maintaining better communications and increasing brand acceptance. Additionally, this innovation has several other benefits that include awareness of social responsibility, recruiting and retaining suitable people. The performance of companies that invest in social accountability, provide appropriate attention to customers through innovation, and appoint appropriate staff will improve. Previous studies illustrate that corporate green performance improves social performance (Asadi et al., 2020). Most of the available literature has concluded that green innovation positively influences sustainable business performance.

The aforementioned discoveries have numerous significant research implications. First, the results support the significance of Green Entrepreneurial Orientation (GEO) in the literature on green entrepreneurship and point to the necessity for more research into the idea and practical applications of GEO in the business world. The identification of green entrepreneurial orientation (GEO) as a precursor to green innovation expands the research area. This allows for the investigation of how GEO impacts green innovation in diverse industrial or cultural settings. Third, because GEO, green innovation, and sustainable business performance are closely related, it is necessary to do research that combines these three ideas, possibly by creating conceptual models or frameworks that outline how they interact. Fourth, the conclusion that green innovation improves sustainable company performance highlights the need for more study on how best to incorporate green innovation into technology and business processes. Fifth, even if these implications are pertinent to scholarly research, they also emphasize how important it is for business practitioners to comprehend and use GEO and Green Innovation, which promotes the need for relevant research that offers recommendations to businesses. Lastly, considering the importance of these results, research methods should be developed or improved in order to measure and evaluate GEO, Green Innovation, and Sustainable Business Performance more precisely and thoroughly.

## CONCLUSION

Empirical evidence indicates that Green Entrepreneurial Orientation (GEO) plays a noteworthy role in motivating businesses to enhance their Sustainable Business Performance. This suggests that a company's potential to achieve more sustainable business performance is largely dependent on its entrepreneurial orientation, which emphasizes sustainability and environmental preservation. Moreover, GEO serves as a catalyst for sustainable corporate performance and as an early indicator of how green innovation is developing. Stated differently, a company's likelihood of creating environmentally friendly inventions increases with its level of green entrepreneurial orientation. Not less significant, a survey of the literature indicated that there is a consensus that Green Innovation improves Sustainable Business Performance. It can be inferred from this that businesses that successfully incorporate green innovation into their operations and business strategy typically have more sustainable company performance, which benefits both their bottom line and the environment.

## REFERENCES

- Asadi, S., Pourhashemi, S. O. S., Nilashi, M., & ... (2020). Investigating influence of green innovation on sustainability performance: A case of Malaysian hotel industry. *Journal of Cleaner Production*, 242, 119552. <https://www.sciencedirect.com/science/article/pii/S0959652620309070>
- Baig, M. I., & Yadegaridehkordi, E. (2023). Exploring moderating effects of industry 4.0 adoption on sustainable performance of Malaysian manufacturing organizations. *Journal of Industrial and Management Optimization*, 19(1), 1-15. <https://doi.org/10.1080/21681015.2023.2190766>
- Du, Y., & Wang, H. (2022). Green Innovation Sustainability: How Green Market Orientation and Absorptive Capacity Matter? *Sustainability (Switzerland)*, 14(13), 1-15. <https://doi.org/10.3390/su14138192>
- Fernando, Y., Jasmi, M. F. A., & ... (2019). Maritime green supply chain management: Its light and shadow on the bottom line dimensions of sustainable business performance. *International Journal of Maritime Business*, 11(1), 1-15. <https://doi.org/10.1504/IJSTL.2019.096>
- García-Granero, E. M., Piedra-Muñoz, L., & Galdeano-Gómez, E. (2018). Eco-innovation measurement: A review of firm performance indicators. *Journal of Cleaner Production*, 191, 304–317. <https://doi.org/10.1016/j.jclepro.2018.04.215>
- Guo, Y., Wang, L. F., & Chen, Y. (2020). Green Entrepreneurial Orientation and Green Innovation: The Mediating Effect of Supply Chain Learning. *SAGE Open*, 10(1), 1-15. <https://doi.org/10.1177/2158244019898798>
- Haffar, M., & Searcy, C. (2017). Classification of Trade-offs Encountered in the Practice of Corporate Sustainability. *Journal of Business Ethics*, 140(3), 495–522. <https://doi.org/10.1007/s10551-015-2678-1>
- Huang, H. C., Lin, T. H., Lai, M. C., & Lin, T. L. (2014). Environmental consciousness and green customer behavior: An examination of motivation crowding effect. *International Journal of Hospitality Management*, 40, 139–149. <https://doi.org/10.1016/j.ijhm.2014.04.006>
- Hye, Q. M. A., Wizarat, S., & Lau, W. Y. (2016). The impact of trade openness on economic growth in China: An empirical analysis. *The Journal of Asian Finance, Economics and Business*, 3(3), 27-37.
- Jiang, W., Chai, H., Shao, J., & Feng, T. (2018). Green entrepreneurial orientation for enhancing firm performance: A dynamic capability perspective. *Journal of Cleaner Production*, 198, 1311–1323. <https://doi.org/10.1016/j.jclepro.2018.07.104>
- Khan, E. A., Royhan, P., Rahman, M. A., Rahman, M. M., & Mostafa, A. (2020). The impact of entrepreneurial orientation on small firms' business performance: The mediation of green marketing mix and eco-labeling strategies. *Sustainability (Switzerland)*, 12(1), 0–15. <https://doi.org/10.3390/SU12010221>
- Kraus, S., Rehman, S. U., & García, F. J. S. (2020). Corporate social responsibility and environmental performance: The mediating role of environmental strategy and green innovation. *Technological Forecasting and Social Change*, 160(August), 120262.

*Lessons from Literature to Comprehend the Nexus of Green Innovation, Green Entrepreneurial Orientation, and Sustainable Business Performance*

- <https://doi.org/10.1016/j.techfore.2020.120262>
- Li, H., Kuo, Y. K., Mir, M. M., & Omar, M. (2022). Corporate social responsibility and environmental sustainability: Achieving firms sustainable performance supported by plant capability. *Economic Research-Ekonomska ...* <https://doi.org/10.1080/1331677X.2021.2015612>
- Magaji, M. S., Baba, R., & Entebang, H. (2017). Entrepreneurial Orientation and Financial Performance of Nigerian SMES: *Journal of Management and Training for Industries*, 4(1), 25–41. <https://doi.org/10.12792/jmti.4.1.25>
- Makhloufi, L., Laghouag, A. A., Sahli, A. A., & Belaid, F. (2021). Impact of entrepreneurial orientation on innovation capability: The mediating role of absorptive capability and organizational learning capabilities. *Sustainability (Switzerland)*, 13(10). <https://doi.org/10.3390/su13105399>
- Meidute-Kavaliauskiene, I., Čiğdem, Ş., Vasilis Vasiliauskas, A., & Yıldız, B. (2021). Green innovation in environmental complexity: The implication of open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(2). <https://doi.org/10.3390/joitmc7020107>
- Muangmee, C., Dacko-Pikiewicz, Z., & ... (2021). Green entrepreneurial orientation and green innovation in small and medium-sized enterprises (SMEs). *Social Sciences*. <https://www.mdpi.com/2076-0760/10/4/136>
- Peris, S. F., Kamisah Supian, Mohammad Waliul Hasanat, & Md. Naim Hossain. (2020). A Mediating Effect of Green Market Orientation on the Environmental Performance: From a Literature Review to a Conceptual Framework. *Journal of Management Info*, 7(2), 92–118. <https://doi.org/10.31580/jmi.v7i2.1421>
- Pratono, A. H., Darmasetiawan, N. K., Yudianto, A., & Jeong, B. G. (2019). Achieving sustainable competitive advantage through green entrepreneurial orientation and market orientation: The role of inter-organizational learning. *Bottom Line*, 32(1), 2–15. <https://doi.org/10.1108/BL-10-2018-0045>
- Susanto, Y. B. (2019). The Impact of Market Orientation and Dynamic Marketing Capability on the Marketing Performance of 'Make-To-Order'SMEs. *J. Mgt. Mkt. Review*. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3518914](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3518914)
- Tan, Z., Sadiq, B., Bashir, T., Mahmood, H., & Rasool, Y. (2022). Investigating the Impact of Green Marketing Components on Purchase Intention: The Mediating Role of Brand Image and Brand Trust. *Sustainability (Switzerland)*, 14(10). <https://doi.org/10.3390/su14105939>
- Tantayanubutr, M., & Panjakajornsak, V. (2017). Impact of green innovation on the sustainable performance of Thai food industry. *Business and Economic Horizons*. <https://www.ceeol.com/search/article-detail?id=664709>
- Tjahjadi, B., Soewarno, N., Hariyati, H., Nafidah, L. N., & ... (2020). The role of green innovation between green market orientation and business performance: Its implication for open innovation. In *Journal of Open ... Elsevier*. <https://www.sciencedirect.com/science/article/pii/S2199853122011489>
- Tze San, O., Latif, B., & Di Vaio, A. (2022). GEO and sustainable performance: the moderating role of GTD and environmental consciousness. *Journal of Intellectual Capital*, 23(7), 38–67. <https://doi.org/10.1108/JIC-10-2021-0290>
- Ullah, S., & Danish, R. Q. (2020). The Impact of Green Entrepreneurial Orientation on Firm Performance through Green Innovation: The Moderating Role of Strategic Green Marketing Orientation. *European Online Journal of Natural and Social Sciences*, 9(2), pp-306-317.
- Ye, F., Yang, Y., Xia, H., Shao, Y., Gu, X., & Shen, J. (2022). Green entrepreneurial orientation, boundary-spanning search and enterprise sustainable performance: The moderating role of environmental dynamism. *Frontiers in Psychology*, 13(October), 1–17. <https://doi.org/10.3389/fpsyg.2022.978274>