

# Enterprise green entrepreneurship orientation: research review and outlook

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**Abstract.** With the rapid development of economy, excessive resource consumption, environmental pollution, ecological civilization construction has become a global common theme, green development concept become the topic of attaches great importance to today's society, enterprises also realized that the enterprise development not at the expense of the environment, from the traditional economy to green economy is imperative. The academic and practical circles began to pay attention to the potential of green entrepreneurship in environmental protection, and green entrepreneurship, as the premise of green entrepreneurship, is the active strategic tendency of enterprises to deal with environmental problems, emphasizing the identification and grasp of eco-friendly opportunities, which reflects the active attitude of enterprises towards environmental issues. Although existing research has made some progress, but few systematic summary to clarify the development of green entrepreneurial orientation, based on this, this study from the connotation, dimension, driving factors and influencing factors combed the green entrepreneurship oriented research progress, and put forward the future outlook, in order to provide support for subsequent green entrepreneurship research.

**Keywords:** Green entrepreneurship orientation, driving factors, influencing factors.

## 1. Introduction

With the rapid development of economy, the excessive consumption of resources, the increasingly serious environmental pollution, and the construction of ecological civilization have become the common theme of the world. The United Nations launched the 2030 Agenda for Sustainable Development in 2015, calling on the world to produce and consume in a sustainable way to promote the prosperity and development of human beings and the planet. The Chinese government has also actively responded to the call of the United Nations, taking green development as a top priority, vigorously promoting the construction of ecological civilization, and striving to achieve carbon peak by 2030. Carbon neutrality by 2060.

The government and society's concern for the environment make enterprises realize that the development of enterprises cannot be at the expense of the environment, and it is imperative to change from the traditional economy to the green economy. With the increasing awareness of sustainable development, scholars believe that environmental problems can be solved through entrepreneurial activities. Green entrepreneurship is a kind of entrepreneurial activity that takes into account economic and environmental benefits. Carrying out green entrepreneurial activities is an important way to solve environmental problems and achieve sustainable development. Forward-looking enterprises take green entrepreneurship-oriented strategies to improve the environment, enhance corporate image and reputation, enhance market competitiveness, and enhance corporate performance. Green entrepreneurship orientation reflects a proactive strategic orientation at the enterprise level, focusing on identifying and seizing eco-friendly business opportunities, and taking into account environmental, social and economic development objectives. Therefore, it has attracted increasing attention from academia and the business community.

Although the academic circle attaches great importance to the study of green entrepreneurship orientation and has made some progress, few studies systematically review and summarize the research status of green entrepreneurship orientation. Based on this, this paper sorts out and summarizes the researches of domestic and foreign scholars on green entrepreneurship orientation.

Firstly, it introduces the connotation and dimension division of green entrepreneurship orientation, then sorts out the driving factors and influencing factors of green entrepreneurship orientation of enterprises. Finally, based on the summary of existing researches, it puts forward the prospect of future research.

## 2. The connotation and dimension of green entrepreneurship orientation

### 2.1. The connotation of green entrepreneurship orientation

The concept of green entrepreneurship orientation originated from the research of entrepreneurship orientation. With the deepening of the research on entrepreneurship orientation, scholars have gradually integrated the green concept into the entrepreneurship orientation, thus expanding the construct of green entrepreneurship orientation. Green entrepreneurship orientation, like entrepreneurship orientation, is the overall tendency of the enterprise strategy level, and the organic integration of entrepreneurship orientation and green entrepreneurship, which requires enterprises to pay attention to both economic benefits and environmental benefits. Due to the increasing attention of green entrepreneurship orientation, scholars' research on the connotation of green entrepreneurship orientation is also deepening. This paper sorts out and summarizes the definition of green entrepreneurship orientation, as shown in Table 1.

**Table 1.** Related Definitions of green entrepreneurship orientation

Scholar	Definition
Jiang, et al. (2018) <sup>[1]</sup>	The tendency to pursue potential opportunities that bring both economic and environmental benefits by introducing eco-friendly products and services
Guo, et al. (2020) <sup>[2]</sup>	On the basis of comprehensive consideration of risks and benefits, identify and grasp the enterprise level of eco-friendly business opportunities
Luu (2020) <sup>[3]</sup>	The degree of strategic initiative, adventure and innovation in the process of initiating and introducing green innovative products or services
Makhloufi et al. (2022) <sup>[4]</sup>	Dynamic vigilance adapted to external environmental responsibilities can cultivate enterprises to perceive and capture opportunities and maintain their environmental activities
Li Xianjiang (2014) <sup>[5]</sup>	In order to make profits, environmental protection and sustainable social development, enterprises should carry out green innovation in products (services) and processes, assume a certain degree of risk, and carry out advanced innovation, so as to attack competitors and explore new markets and assume due social responsibility
Li Huajing (2015) <sup>[6]</sup>	Significant ways, styles, and characteristics that individuals or businesses reflect and embody in the process of identifying, developing, and exploiting entrepreneurial opportunities related to environmental issues
Xia Han (2019) <sup>[7]</sup>	In the process of entrepreneurship or enterprise operation, the sense of social responsibility, environmental protection concept, innovation and adventure spirit shown in the organizational structure, operation management, resource allocation, etc
Feng Taiwen et al. (2020) <sup>[8]</sup>	Green entrepreneurship orientation is the optimal strategic orientation under the requirements of sustainable development for enterprises to identify green market opportunities, face green market risks, take the initiative to assume environmental and social responsibilities, actively carry out green reform, and win competitive advantages and market position
Zhang Xiu'e, et al. (2021) <sup>[9]</sup>	Enterprises develop and implement a unique strategic decision-making mode that considers economy, environment and society

Through Table 1, we can find that despite the concept of green entrepreneurship orientation, its connotation has the following characteristics: first, green entrepreneurship orientation is a strategic orientation, such as innovation, adventure, initiative, etc.; second, green entrepreneurship orientation

emphasizes the pursuit of eco-friendly business opportunities; third, green entrepreneurship orientation pursues the win-win environmental and economic benefits.

## **2.2. The dimension division of green entrepreneurship orientation**

### **2.2.1 Single-dimensional division**

The dimension division of the green entrepreneurship orientation is derived from the entrepreneurship orientation. Since Covin and Slevin (1989)<sup>[10]</sup> first measured entrepreneurial orientation, the scholars still measured the green entrepreneurship orientation as a whole structure when they studied it in the strategic field. For example, Guo et al. (2020)<sup>[12]</sup> believed that green entrepreneurial orientation should be regarded as an independent system that represents a complex and unique model of operation and strategic decision making.

### **2.2.2 Two-dimensional division**

For the two-dimensional division of green entrepreneurship orientation, scholars pay more attention to the development benefits brought. For example, Cohen and Winn (2007)<sup>[11]</sup> believed that the green entrepreneurial orientation has obvious social orientation and environmental orientation, and the enterprise refers to solving social problems in the entrepreneurial process with the goal of improving social status and social well-being, and the environmental orientation refers to the enterprise includes environmental management in the entrepreneurial process with the goal of improving environmental quality and promoting sustainable development. And based on the study of Shepherd and Patzelt (2011)<sup>[12]</sup>, domestic scholar Li Huajing (2015)<sup>[6]</sup> believed that green entrepreneurship orientation contains two basic dimensions, namely sustainability and development. Among them, sustainability includes social responsibility and environmental protection, while development includes independent research and development and growth space.

### **2.2.3 Three-dimensional division**

By referring to Miller (1983)<sup>[13]</sup> for the dimensional division of entrepreneurial orientation, domestic scholar Li Xianjiang (2012)<sup>[14]</sup> divided the green entrepreneurship orientation into three dimensions: green innovation, green advanced action and green adventure. Similarly, Jiang, et al. (2018)<sup>[1]</sup> believed that green entrepreneurship orientation includes green innovation orientation, green action first orientation and risk taking orientation. Zhang Xiu'e et al. (2021)<sup>[15]</sup> also followed the three-dimension division method when studying the impact of green entrepreneurial orientation on green competitive advantage, and believed that the important contents of green entrepreneurial orientation included green innovation, green initiative and green risk-taking.

### **2.2.4 Four-dimensional division**

For the four-dimensional division of green entrepreneurship orientation, domestic scholars study more deeply and carefully. Based on existing scholars, Li Xianjiang (2013)<sup>[16]</sup> believed that green entrepreneurship is divided into four dimensions: green innovation, green advanced action, green adventure and social friendliness; Wang Xiufeng et al. (2015)<sup>[17]</sup>, Ma Li and Ma Meishuang (2018)<sup>[18]</sup> and Xia Han (2019)<sup>[7]</sup> refined green entrepreneurship orientation into four dimensions: innovation-oriented, first-motion-oriented, environment-oriented and social-oriented; while Feng Taiwen (2020)<sup>[8]</sup> drew on the research of Criado-Gomis (2018)<sup>[19]</sup> to measure green entrepreneurship orientation from four dimensions: green innovation willingness, competition response, green opportunity foresight and market leadership willingness.

**Table 2.** Dimension summary table

Dimension	Scholar	Point of view
Single dimension	Guo, et al. (2020) <sup>[2]</sup>	A complex and unique model of operational and strategic decision-making
Two dimensions	Cohen and Winn (2007) <sup>[11]</sup>	Social oriented and environmental oriented
	Li Huajing (2015) <sup>[6]</sup>	Sustainability and development
Three dimensions	Li Xianjiang (2012) <sup>[14]</sup>	Green innovation, green advanced action, green adventure
	Jiang, et al. (2018) <sup>[1]</sup>	Green innovation oriented, green first oriented, risk taking oriented
	Zhang Xiu'e, et al. (2021) <sup>[15]</sup>	Green innovation, green first activity, green adventure
Four dimensions	Li Xianjiang (2013) <sup>[16]</sup>	Green innovation, green advanced action, green adventure, social friendliness
	Wang Xiufeng et al. (2015) <sup>[17]</sup>	Innovation oriented, first oriented, environment oriented, social oriented
	Ma Li and Ma Meishuang (2018) <sup>[18]</sup>	
	Xia Han (2019) <sup>[7]</sup>	Green innovation willingness, competition response, forward-looking green opportunities, and market-leading willingness
Feng Taiwen (2020) <sup>[8]</sup>		

### 3. Research on the driving factors of green entrepreneurship orientation

Through the combing of the existing literature, it can be found that there are multiple factors to influence the orientation of green entrepreneurship. In summary, the research is mainly conducted from the three aspects of the external environment of the enterprise, the organizational level of the enterprise and the individual level within the enterprise.

#### 3.1. Environmental level

Ang et al. (2015)<sup>[20]</sup> believed that the external institutional environment of an enterprise often restricts its business scope and affects its strategic response. For example, Zhu Honggen and Ge Jihong (2018)<sup>[21]</sup>, taking leading agricultural enterprises as the investigation object, found that the greater the intensity of government regulation (incentive regulation and constraint regulation), the more likely it is for enterprises to carry out green entrepreneurship. The study of Zameer et al. (2020)<sup>[22]</sup> showed that both consumer pressure and regulatory pressure have a positive impact on enterprises' green production behavior. In addition, the competitive environment of an enterprise will also affect the integration of internal and external green activities. Li Yina and Xu Li (2017)<sup>[23]</sup> found that the more intense the competitive environment, the more inclined an enterprise is to implement internal green practices. Zhao et al. (2021)<sup>[24]</sup> found that enterprises will transfer the perceived pressure of competitors' green success to suppliers, and deal with the threat of competitors through green supplier integration.

#### 3.2. Organizational level

Sharma et al. (2007)<sup>[25]</sup> believed that although resources are essential to support any ongoing process within an organization, they are especially important in green business activities due to their professionalism, complexity and fast-changing nature. Therefore, some scholars have studied the impact of organizational resources on the green entrepreneurial orientation of enterprises. On the one hand, Leonidou et al. (2013)<sup>[26]</sup>, when analyzing the data of 152 Greek hotels, found that having sufficient tangible resources such as material and financial resources is helpful for enterprises to implement effective green marketing strategies. On the other hand, intangible knowledge resources

will also have an impact on green entrepreneurial activities. Research by Marzucchi and Montesor (2017)<sup>[27]</sup> showed that external and internal knowledge plays an important role in promoting eco-innovation strategies. With the deepening of research, more and more attention has been paid to the impact of organizational ability on green entrepreneurship orientation. Scholars believe that organizational ability is the basis for improving corporate green practices. For example, Aboelimged and Hashem (2019)<sup>[28]</sup> found that enterprises create and disseminate green knowledge and information through absorptive ability. Will affect its sustainability orientation and green innovation adoption; Makhloufi et al. (2022)<sup>[29]</sup> pointed out that environmental collaboration, as a dynamic strategic capability to establish relationships with external partners based on improving the external environment, has a significant impact on enterprises' green entrepreneurship orientation.

### 3.3. Individual level

Senior managers or entrepreneurs play an important role in the formulation of corporate strategy, and their individual heterogeneity and cognitive differences will have a certain impact on the green entrepreneurship orientation of enterprises. Existing studies on individual heterogeneity are mainly conducted from the aspects of education level, gender and age. For example, when Hoerisch (2017)<sup>[30]</sup> investigated the determinants of environmental orientation of entrepreneurial activities, it was found that entrepreneurs with higher education level tended to have a lower degree of environmental orientation. Wang Zhong et al. (2020)<sup>[31]</sup> showed that female entrepreneurs show a higher level of environmental awareness, a higher tendency to care for the society, and are committed to creating social value. Ameer and Khan (2020)<sup>[32]</sup> found that compared with older managers, younger managers are able to identify and capture new opportunities in the market and are more concerned about environmental and social issues, so they are more inclined to adopt a green entrepreneurial orientation. Cognitive differences among managers are mainly reflected in their cognition of the management environment. Kirchoff et al. (2016)<sup>[33]</sup> found through empirical research that managers with higher awareness of environmental risks can actively promote enterprises to focus on implementing green supply chain management.

## 4. Study on the influencing factors of green entrepreneurship orientation

Although green entrepreneurship orientation needs to take into account social and environmental benefits, its core element is entrepreneurship, and it is still very important to pay attention to the economic benefits brought by it. Therefore, many scholars at home and abroad have discussed the relationship between green entrepreneurship orientation of enterprises, enterprise performance and competitive advantage.

### 4.1. Impact on enterprise performance

The relationship between green entrepreneurship orientation and enterprise performance has always been the focus of academic research. Based on the existing research results, most scholars believe that green entrepreneurship orientation will have a positive impact on enterprise performance. Wang Xiufeng et al. (2015)<sup>[17]</sup> studied the relationship between green entrepreneurship orientation and corporate performance of 132 high-tech enterprises in Zhongguancun area, and found that proactive orientation will promote the improvement of corporate financial performance, while innovation, environment and social orientation will actively promote the improvement of corporate growth performance. Criado-Gomis et al. (2018)<sup>[19]</sup> showed that green entrepreneurship orientation, which places entrepreneurship and sustainability in an equally important position, improves the opportunities for long-term development of organizations, and therefore has a positive impact on corporate performance. When Feng Taiwen et al. (2020)<sup>[8]</sup> explored the relationship between green entrepreneurship orientation and corporate performance, they found that green entrepreneurship orientation would have a significant positive impact on the financial performance and environmental performance of enterprises, and the implementation of entrepreneurial-oriented strategy would enable

enterprises to obtain a good image and good economic and social benefits. Sun Xinyu and Zhang Xiu'e (2020)<sup>[34]</sup> studied the impact of green entrepreneurship orientation on the performance of agricultural enterprises in the three northeastern provinces and found that green entrepreneurship orientation would have a positive impact on the performance of agricultural enterprises. Zhang Xiu'e and Li Qing (2021)<sup>[35]</sup> also took agricultural start-ups as research objects. Empirical research results show that the implementation of green entrepreneurship orientation in agricultural start-ups will have a positive impact on their financial performance and environmental performance. Alkaraki et al. (2022)<sup>[36]</sup> analyzed the data of 384 small and medium-sized manufacturing enterprises in Jordan and concluded that the implementation of green entrepreneurship orientation is a key resource for enterprise success and will significantly positively affect enterprise performance.

#### **4.2. Impact on the competitive advantage**

From the perspective of green entrepreneurship, the relationship between green entrepreneurship orientation and competitive advantage of enterprises has gradually become the focus of scholars. Ma Li and Ma Meishuang (2018)<sup>[18]</sup> found in their research on new technology enterprises that green entrepreneurship orientation is not only a commitment to the environment but also an investment in green intangible assets. Therefore, the implementation of green entrepreneurship orientation strategy has a positive impact on the competitive advantage of new technology enterprises and helps to improve the competitive advantage of enterprises. Pratono et al. (2019)<sup>[37]</sup> proved that the implementation of green entrepreneurship orientation has a positive impact on sustainable competitive advantage by constructing a structural equation model. Zameer et al. (2020)<sup>[22]</sup> discussed how green production can be transformed into a competitive advantage. They found that green production helps to enhance the green brand image, cope with the complex and changing market situation, and is conducive to the improvement of its competitive advantage. Qiu et al. (2020)<sup>[38]</sup> focused on the impact of green product innovation and green dynamic capability on the competitive advantage of China's manufacturing industry, and believed that the green entrepreneurship orientation of enterprises would significantly and positively affect the competitive advantage of enterprises. Zhang Xiu'e et al. (2021)<sup>[15]</sup> explored the impact mechanism of green entrepreneurship orientation on the sustainable competitive advantage of enterprises based on the view of natural resources, and found that: Green entrepreneurship orientation will have a positive impact on sustainable competitive advantage. Because enterprises implementing green entrepreneurship orientation are more able to promote the coordinated development of economy, society and environment, they can continue to maintain advantages in market competition. Thereafter, Zhang Xiu'e et al. (2021)<sup>[35]</sup> built a mediating model between green entrepreneurial orientation and competitive advantage based on the spiral theory of knowledge creation, and concluded that green entrepreneurial orientation is an important driving factor for new startups to obtain and maintain green competitive advantage.

### **5. Future Prospects**

As for the research on the driving mechanism of green entrepreneurship orientation, most of the existing results are based on quantitative research. In the future, representative cases can be selected for qualitative analysis, and the driving mechanism of green entrepreneurship orientation of enterprises can be analyzed through in-depth analysis of the specific situation of the cases.

As for the exploration of the mechanism of green entrepreneurship orientation, most of the existing studies use cross-sectional data at a certain moment for analysis, which cannot reveal the dynamic change of green entrepreneurship orientation. In future studies, longitudinal studies can be conducted on enterprises at different growth stages to deeply explore the process of green entrepreneurship of enterprises, so as to make the research on the influence mechanism more accurate and reliable.

At present, only some industries with prominent environmental problems have been considered in the existing studies, such as agriculture, manufacturing and scientific and technological enterprises. However, the issue of green development is very important in many industries, such as green dining

and green travel. Therefore, we can try to study the green entrepreneurial orientation of service industry and tourism industry in the future.

## 6. Summary

Green entrepreneurship orientation reflects the proactive strategic tendency of enterprises. Existing studies show that the green entrepreneurship orientation of enterprises is mainly affected from the external environment level, the organizational level and the internal individual level of enterprises, and the economic benefits brought by green entrepreneurship orientation will have a certain impact on enterprise performance and competitive advantage.

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