Proceedings of the 4th International Conference on Business and Policy Studies
DOI: 10.54254/2754-1169/163/2025.20679

The Interaction Between ESG Investment and Enterprise Innovation

Zekai Yang[1,a,*]
[1]*Economic Wenzhou-Kean University Wenzhou, 325000, China*
a. 1337614@wku.edu.cn
**corresponding author*

Abstract: In the field of global investment, ESG investment is booming, and corporate innovation is crucial to sustainable development. This study aims to deeply analyze the two-way impact mechanism of ESG investment that stimulates enterprise innovation through resource investment, risk management and market demand drive, such as providing financial support, promoting resource integration, responding to changes in environmental regulations and meeting market demand. Enterprise innovation results can attract ESG investment and enhance corporate image by improving ESG performance and disseminating innovative results. Through the case analysis of different types of enterprises, it is found that the interaction between the two has the characteristics of mutual promotion and coordinated development, and is affected by the industry, scale and other factors of the enterprise. Theoretically, this enriches the relevant research content, and in practice, it serves as a reference for enterprises. Future research can further expand the scope of samples, deeply explore the relationship between the WTO in different situations and build a policy support system.

Keywords: ESG investment, enterprise innovation, sustainable development, incentive effect, attractive effects

1. Introduction

In the field of global investment, ESG investment is booming, emphasizing the comprehensive performance of enterprises in environment (E), society (S) and governance (G). At the same time, enterprise innovation is crucial to sustainable development. Exploring the interaction between ESG investment and enterprise innovation helps enterprises formulate more scientific and reasonable development strategies, optimize investment decision-making, and also provides policymakers with a theoretical and practical basis to guide enterprises to achieve sustainable development. Analyze the specific ways in which executive actions and stakeholder engagement influence a company's environmental performance and public reputation, with emphasis on how governance practices shape sustainability outcomes. Provide concrete examples and identify key factors that contribute to positive or negative impacts. They mainly focus on the interaction between the social (S) dimension and executive factors and between the social (S) dimension and stakeholder factors. The personality, values, political ideology, age, and other variables of executives affect social responsibility actions and the degree of commitment. Similarly, investment in social responsibility also affects internal governance activities.[1]

This study aims to deeply analyze the two-way impact mechanism between ESG investment and enterprise innovation. Specific questions include: How can ESG investment stimulate enterprises to innovate in terms of resource investment, risk management, market demand-driven and other aspects? How can enterprise innovation achievements attract ESG investment in improving ESG performance, enhancing sustainable development potential, and shaping corporate image? How to optimize the relationship between the two to promote the sustainable development of enterprises?

2. Theoretical Foundation and Literature Review

2.1. ESG investment-related theories

ESG investment covers three dimensions: environment, society and governance. The environmental dimension focuses on the use of natural resources and environmental protection measures of enterprises; the social dimension involves the relationship between enterprises and employees, communities and other stakeholders; The governance dimension should focus on the detailed aspects of an enterprise's internal management structure and decision-making mechanisms, including but not limited to board composition, executive accountability, transparency of decision-making processes, and stakeholder engagement. Please provide a comprehensive analysis of these elements and their impact on corporate governance. Its main theoretical foundations include sustainable development theory, which emphasizes the coordinated development of economy, society and environment. Upon examining the ESG initiatives and propositions proposed by various international organizations, it becomes evident that most ESG reporting frameworks prioritize providing information to assist stakeholders in assessing the risks and opportunities of corporate sustainable development, thereby demonstrating the extensive influence of sustainable development theory on ESG. In addition, many ESG reporting frameworks draw on the essence of sustainable development theory in the design of indicator systems, especially in the area of social and environmental sustainability.[2]; stakeholder theory, which believes that enterprises should consider the interests of all kinds of stakeholders; and the theory of entrusted agency, which aims to resolve conflicts of interest between enterprise owners and managers.

2.2. Enterprise Innovation Theory

There are various types of enterprise innovation, including product innovation, technological innovation, management innovation, etc. Starting from Schumpeter's innovation theory, the driving mechanism of enterprise innovation stems from factors such as market competition, internal demand of enterprises and the development of production technology. The innovation process is affected by many factors such as R&D investment, talent reserve, innovation culture and so on.Turning to the link between micro-level enterprise growth and macro-level economic performance, it shows how the theory of innovative enterprise reveals a fundamental flaw in the logic that underlies the neoclassical monopoly model. The theory of innovative enterprise provides us with a microeconomic theory that shows how, through the development and utilization of productive resources, the growth of the firm can result in more output at lower prices. The policy challenge, as outlined in the final section of this paper, is then to understand how the government can influence the social conditions of innovative enterprise in ways that support the achievement of equitable and stable economic growth.[3]

2.3. Research status of the relationship between ESG investment and enterprise innovation

Scholars at home and abroad have studied the relationship between ESG investment and enterprise innovation. Some studies show that ESG investment can provide resource support for enterprise innovation and promote innovation development; some studies have found that enterprise innovation

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results can improve ESG performance and attract more ESG investment. However, there are differences between research methods and conclusions. Given the rapid growth of global ESG investment, regulators, investors, and enterprises are increasingly focusing on ESG. More and more enterprises are incorporating ESG principles into key decision-making processes. However, the validity of ESG performance remains controversial in existing studies, with most studies focusing on the impact of ESG performance in developed countries. However, there is a lack of research exploring the role of ESG performance and its relationship with corporate innovation in developing countries. [4]

3. The incentive effect of ESG investment on enterprise innovation

3.1. Resource investment to support innovation

Environmental, social and governance (ESG) performance of a firm is increasingly important to policy makers and investors. To promote high-quality economic development, countries should emphasize the harmony between humans and nature which include: integrating ESG factors into investment decisions to enhance environmental protection responsibility, adapting to natural conservation, and improving ecosystem stability and sustainability. At the same time, global industrial competition raises the awareness of innovation ability for a country's high-quality economic development.[5]ESG investment provides direct financial support for enterprise innovation activities. The enterprise spends part of the funds on environmental technology research and development, such as the development of clean energy technology; invests in employee skill improvement training to improve employees' innovation ability; builds an innovation management system and optimizes the innovation process. The study found that the proportion of ESG investment funds to the total investment of enterprises is on the rise, which has strongly promoted the start and promotion of innovative projects.

ESG investment promotes enterprises to integrate internal and external human and technical resources. Attract high-quality innovative talents to join by improving the working environment and welfare benefits. At the same time, cooperate with scientific research institutions and suppliers to obtain cutting-edge technical resources and strengthen cross-departmental collaborative innovation within the enterprise. For example, an enterprise cooperated with universities to carry out research and development projects and achieved remarkable innovative results.

3.2. Risk management ensures the stability of innovation

Enterprises actively respond to changes in environmental regulations and public opinion to stimulate innovative thinking. Enterprises strive to meet stringent environmental protection standards, boost their investment in cleaning technology research and development, and enhance the eco-friendliness of their products. For example, a chemical enterprise has invested a large amount of money in the research and development of environmentally friendly production processes to reduce pollution emissions and improve product competitiveness.

3.3. Market demand and stakeholder demand-driven innovation orientation

Consumers' attention to environmental protection and social responsibility has increased, which promotes enterprises to innovate products and services. Enterprises will increase the research and development of sustainable materials and the design and innovation of energy-saving products to meet market demand. For example, consumers' demand for green household appliances has increased, and enterprises have launched energy-saving and efficient appliances.

ESG investors prefer long-term value investment, which affects the formulation of enterprise innovation strategies. In order to attract investment, adjust the focus of innovation and increase innovation investment in renewable energy, circular economy and other fields, so that the innovation strategy meets the expectations of investors and obtains more funds and resource support.

4. The attractive effect of enterprise innovation on ESG investment

4.1. Innovation to improve the ESG performance of enterprises

Analyze how a company's strong performance in environmental responsibility, as part of its ESG framework, directly impacts its integration of sustainable development into core business practices. Studies have shown that a company’s commitment to green strategies, green organizational culture, green organizational identification, and environmental values can effectively promote green innovation [6,7,8]. Additionally, a better environmental performance of a company indicates a richer knowledge base and widespread presence of green knowledge within the organization, which is essential for organizational innovation[9]Technological innovation achievements such as energy conservation and emission reduction and resource recycling have significantly improved the environmental performance of enterprises. The new production process reduces energy consumption and waste emissions, and improves energy utilization efficiency. For example, a steel enterprise adopts new technology to greatly reduce carbon dioxide emissions, which is outstanding in environmental protection.

Innovative products or services meet social needs and improve social welfare. Innovative medical products improve the effect of disease treatment, and educational science and technology products promote educational equity and quality improvement, reflecting the social value of enterprises.

Management mode, organizational structure and corporate culture innovation optimize the level of corporate governance. Digital management innovation improves decision-making transparency and operational efficiency, enhances risk management capabilities, and protects the rights and interests of stakeholders. Enterprise digital transformation can improve its ESG responsibility performance. Every 1% increase in enterprise digital transformation will promote enterprise ESG responsibility performance by 0.096%, while every 1% increase in digital strategy and digital technology will promote enterprise ESG responsibility performance by 0.114% and 0.080%, respectively. Digital strategy plays a more important role in promoting ESG responsibility performance.[10]

4.2. Dissemination of innovative achievement and ESG investment market

To realize innovation-driven and sustainable development, incorporating environmental, social and governance factors into investment and innovation decisions is not only the key to solving global social problems, but also an important way to promote national economic transformation and international cooperation and exchange. The concept of ESG was born as a way to pursue the economic benefits of enterprises while taking into account the social benefits, guide enterprises to pay attention to environmental protection, social responsibility and other aspects of sustainable development indicators, and encourage investors and enterprise managers to focus on the long-term performance of the enterprise in investment activities and business management, which has received widespread attention from investors, enterprises and governments. Internationally, many developed and emerging economies have widely adopted ESG standards to realize the coordinated development of economic growth and environmental protection. For instance, the European Union's "Green Deal" policy framework and the U.S. Securities and Exchange Commission's new climate disclosure regulations are both examples of positive actions that demonstrate the practical application and promotion of ESG concepts globally. Enterprises promote innovative achievements in a variety of ways, shape the image of innovation and improve the reputation of ESG. Participate in industry exhibitions, publish sustainable development reports, participate in public welfare activities, etc., convey the concept of innovation-driven sustainable development to the market and attract the attention of investors. For example, a technology enterprise actively participates in industry exchange activities, displays its innovative achievements, and improves its popularity in the field of ESG investment[11].

5. Analysis of the interaction between ESG investment and innovation in case enterprises—Case analysis

Select representative enterprises of different industries, scales and development stages, such as a new energy enterprise, a traditional manufacturing enterprise and an emerging technology enterprise. New energy enterprises focus on renewable energy development and are in a leading position in the industry; traditional manufacturing enterprises are facing industrial upgrading pressure; emerging technology enterprises have high growth potential. The development trend of ESG in different industries is different. The new energy industry pays attention to environmental sustainability, the manufacturing industry pays attention to the improvement of production technology and employee welfare, and the science and technology industry emphasizes innovative management and social responsibility. Traditional manufacturing enterprises invest in improving production equipment and employee skills, while emerging science and technology enterprises establish innovation research and development centers to strengthen their cooperation with universities. ESG investment in new energy enterprises attracts high-end technical talents and promotes breakthroughs in new energy technology; investment in traditional manufacturing enterprises optimizes the production process and stimulates employees' enthusiasm for innovation; investment in emerging science and technology enterprises promotes industry-academia-research cooperation and accelerates the transformation of innovative achievements.

The innovative achievements of new energy enterprises enhance their competitiveness in the field of renewable energy and attract the attention of ESG investors; the innovation of traditional manufacturing enterprises improves production efficiency and product quality, enhances the potential of sustainable development, and attracts investment; the innovation of emerging science and technology enterprises shapes a good corporate image and attracts venture capital, etc. SG capital investment. The successful experience of the case enterprise includes integrating the ESG concept into the enterprise strategy and rationally allocating resources, etc. The challenges include a long return on ESG investment cycle and high innovation risks. It provides inspiration for other enterprises in strategic planning, resource integration and other aspects.

6. Conclusion

ESG investment has a significant incentive effect on enterprise innovation in terms of resource investment, risk management and market demand drive. Enterprise innovation achievements attract ESG investment, which improves ESG performance, enhances sustainable development potential, and shapes corporate image. The interactive relationship between the two shows the characteristics of mutual promotion and coordinated development, and is affected by the industry, scale and other factors of the enterprise.

Theoretically, it enriches the research content in the field of ESG investment and enterprise innovation, and improves the theoretical framework of the relationship between the two. In practice, it provides a reference for enterprises to improve their management level and cope with risks. Future research can further expand the scope of the sample, deeply explore the relationship between the two in different situations, and how to build a more effective policy support system to promote the benign interaction between ESG investment and enterprise innovation.

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