

A Comparative Study on Different Modes of Green Innovation and Performance Differences of Enterprise

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Abstract: Under the new development, new opportunities and new models, China attaches more importance to the green development of enterprises, green and low-carbon development is becoming more and more important in the strategic position. This paper adopts the method of case study, analyzes the relationship among the motivation, mode and performance of green innovation, divides green innovation behavior into various types, and makes a comparative study on the difference of green innovation mode and performance of typical enterprises with different characteristics in Shaoxing, Zhejiang Province. It is found that the environmental performance, financial performance and market performance brought by substantive green innovation achieve the best effect, and the financial performance brought by strategic green innovation is better, but the change of environmental performance and market performance is relatively not obvious, and the financial performance and market performance brought by irritable green innovation have no obvious change, and the environmental performance brought by environmental innovation is also average.

1 Introduction

At present, ecological and environmental protection has put forward higher requirements for economic development, and enterprises in various industries have carried out green innovation and green innovation. It has important theoretical value and practical significance to explore the influence of different green innovation modes on enterprise environment, finance and market performance, and how enterprises choose green models.

2 Literature review

Based on the motivation of enterprises to carry out green innovation, the green innovation behavior of enterprises can be divided into substantive green innovation and strategic green innovation [1]. Substantive green

innovation refers to improving technology level, strengthening core competitiveness and pursuing environmental performance through green innovation [2], while strategic green innovation is a "passive" behavior that caters to government policies and systems and pursues short-term benefits [3]. Government research and development can have a positive impact on enterprises' green innovation, and encourage enterprises to increase green investment [4]. At the same time, achieving sustainable development through green innovation can make enterprises gain relative competitive advantages [5]. The government's environmental governance has significantly promoted the green innovation of enterprises and made important contributions to both substantive and strategic green innovation [6]. Corporate environmental governance and green innovation can improve corporate performance,

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productivity and market competitiveness.

3 Research methods and data sources

3.1. Research methods

The case study method is a qualitative research method, which is suitable for the research question and the research basis[7,8]. Since this paper focuses on the core research question of "the comparison of different models and performance differences under enterprise green innovation", and relevant researches are relatively lacking at present, it is appropriate to analyze this issue based on cases.

3.2. The selection of survey objects

At the same time, this paper adopts the case study method, selects several enterprises, according to the different specific green innovation mode, will select typical representative enterprises to carry out research. To improve the credibility of case studies, we analyzed cases from multiple information sources and selected two methods of primary and secondary data collection. First-hand data is the field research, interview and questionnaire survey of enterprises and the questionnaire survey for ordinary residents. The second-hand data comes from the content of the relevant websites of enterprises.

4 Case analysis

4.1 Substantive green innovation and effectiveness

4.1.1. Green innovation strategy: continue to increase the research and development of new technologies and introduce new equipment.

In terms of industrial research and development, Zhejiang Yingfeng Technology Co., LTD set up a special research and development fund, using about 4% of its main business for research and development, and successfully developed a series of new product projects. In technological innovation, Yingfeng has invested more than 60 million yuan to establish technical research cooperation platform with many universities. In terms of advanced

equipment, Yingfeng has invested more than 2 billion yuan to introduce high-end advanced equipment in the industry. In order to achieve substantial green and low-carbon, more than 50 million yuan has been invested to buy advanced square tower type efficient electrostatic treatment device for waste treatment.

4.1.2. Innovation results

Through increasing R & D investment, focusing on technology research and development and equipment introduction, Yingfeng has implemented more than 60 new product and new technology development projects, obtained a number of invention patents and utility model patents, and improved product quality and added value; In terms of advanced equipment, Yingfeng has invested more than 2 billion yuan, introduced high-end advanced equipment in the industry, and promoted the intelligent green development of enterprises through the model of "machine replacement" and "energy saving and emission reduction". The removal rate of soot and particulate matter has been significantly improved, and 200 million yuan has been invested in the construction of two sets of sewage treatment facilities, and the wastewater reuse rate has reached more than 60%. The amortization of external sewage charges, pollutant treatment charges and pollution rights costs has been greatly reduced, and good performance has been achieved at the emission reduction level.

4.2. Strategic green innovation and its effectiveness

4.2.1. Government arbitrage

(1) Green innovation strategy: get closer to arbitrage policies, access to capital sources

Zhejiang Lego Printing and dyeing Co., Ltd. relies on policy support to complete green innovation and upgrading. By taking advantage of the strategic opportunity of the country to vigorously develop the multi-level capital market, obtaining the policy support from all aspects of government funds, and using the capital market to realize the upgrading of capital, technology, management and other aspects, so as to accelerate the pace of innovation of traditional industries.

(2) Achievements in green innovation

Now Zhejiang Lego printing and dyeing Co., Ltd. is one of the first batch of 7 green benchmark enterprises in

Shaoxing City. The company takes knitting fabrics as the pillar products, has all kinds of imported and domestic knitting large circular machine more than 100 sets. Products are exported to America, Europe, Southeast Asia, South Africa and other places. As the world's leading textile dyeing and finishing technology, anhydrous dyeing is further advanced in saving water and steam energy. Compared with the advanced German Turn airflow cylinder, the comprehensive cost of water, steam and other energy is reduced by 35%, energy saving and emission reduction by 60%, and the added value of products can be increased by more than 30%.

4.2.2. Financial arbitrage

(1) Green transformation strategy: to help green new finance and complete equipment upgrading

Alice Dyeing and Finishing Co.,Ltd is a beneficiary of the emission right mortgage loan. The daily emission index of the company is 9844.1 tons. After full evaluation by the Shaoxing Branch of Hengfeng Bank, it uses its 9844.1 tons / day emission right as collateral, and gives credit of 147 million yuan to help the enterprise's production and transformation and upgrading. The company handled green financial loans through Ruifeng Bank and completed corporate financing.

(2) Effectiveness of green transformation

ALICE and has become the leader in the third phase of Keqiao printing and dyeing cluster project: comfortable office environment and new modern standard workshop. The company has invested more than 400 million yuan, among which more than 200 million yuan was invested in introducing high-end advanced equipment, accounting for about 60% of the total investment. After the introduction of equipment, ALICE reduces COD emissions, recovers the waste gas, successfully reduces the cost of energy saving and emission reduction, the comprehensive cost of water, steam and other energy is reduced by 32%, energy saving and emission reduction by 58%, but the added value of products can be increased by more than 31%.

4.3. Exciting green innovation and effect

4.3.1. Current situation and problems of the company before innovation

Stress is a mode of short-term green innovation and upgrading for the completion of government indicators. Shaoxing cloth tai textile printing and dyeing co., LTD in

a few years ago to the corresponding government instructions, under the condition of their own enterprise for green innovation, architecture advanced equipment technology, but at the same time the lack of understanding of the corresponding mode, the problem of poor management, eventually shareholders to withdraw, lead to capital turnover problems, thus causing a series of problems.

4.3.2. The result of the company's innovation failure

In the later stage of operation, it is not necessary to attach great importance to environmental protection and strictly follow the standards of printing and dyeing industry, to carry out the rectification of environmental problems, further increase the transformation of production process equipment, safety and environmental protection facilities; not to fundamentally improve the management level of "three wastes", nor to promote sustainable development. These lead to the enterprise can not operate normally and have an advantage in similar enterprises, and eventually closed down.

5 Conclusions and implications

5.1. Research conclusions

Green innovation mainly includes three green innovation and upgrading modes: substantive green innovation, arbitrage green innovation and stress green innovation. From the perspective of substantive green innovation enterprises, The early investment in green innovation and the stagnation of production capacity in the innovation process have an obvious impact on financial performance, The investment of green innovation funds can directly promote the accumulation of scientific research achievements; From the perspective of arbitrage and green innovation enterprises, In terms of financial performance, In the early stages of green innovation, Government subsidies account for a large portion of its profits, Therefore, its green innovation process is relatively stable, Full of development momentum; However, the conversion rate of green innovation capital investment is lower than that of substantive innovation enterprises, The desire for green and innovative development; From the perspective of stress and green innovation enterprises, In terms of financial performance, Green innovation is more obvious to the stagnation of

enterprise production capacity, From the analysis of the environmental performance, Stress-type green innovation enterprises aim to complete the government's green innovation indicators, The subjective investment willingness of green innovation is relatively low.

5.2. Management implications

Entering the new stage of development, enterprises need to take green and low-carbon development as an important strategy. In the other hand, it is necessary to encourage the development model of the improvement of production technology and the application of the advanced production technology to the actual production.

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