



**THE IMPACT OF GREEN SUPPLY CHAIN MANAGEMENT ON
CORPORATE COMPETITIVENESS OF BYHEALTH CO., LTD**



**AN INDEPENDENT STUDY SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF BUSINESS ADMINISTRATION
GRADUATE SCHOOL OF BUSINESS
SIAM UNIVERSITY
2023**



**THE IMPACT OF GREEN SUPPLY CHAIN MANAGEMENT ON
CORPORATE COMPETITIVENESS OF BYHEALTH CO., LTD**

SHEN ZHIHUA

This Independent Study has been approved as a Partial Fulfillment of the
Requirements for the Degree of Master of Business Administration

Advisor: *Chao Qiu*
(Dr. Qiu Chao)

Date: *25* / *11* / *2024*

.....
[Signature]
.....
(Associate Professor Dr. Jomphong Mongkhonvanit)
Dean, Graduate School of Business

Date: *8* / *3* / *2025*

Title: The Impact of Green Supply Chain Management on Corporate Competitiveness of Byhealth Co., Ltd
By: Shen Zhihua
Degree: Master of Business Administration
Major: International Business Management

Advisor:


.....
(Dr. Qiu Chao)

25 / 11 / 2024
.....

ABSTRACT

With the continuous development of the economy and the prevalence of environmental protection concepts, traditional supply chain management could no longer adapt to the strategic planning of enterprises pursuing environmental protection and green development, resulting in the emergence of green supply chain management. Green supply chain management considers environmental and green development factors on the basis of traditional supply chain management, adapts to market demand, and is conducive to sustainable development of enterprises. Therefore, the production and operation process of enterprises must introduce green supply chain management. This study aimed to investigate the impact of customer service, environmental performance, business processes, social responsibility on corporate competitiveness of Byhealth Co., Ltd.

Based on the theory of sustainable development, this study adopted a quantitative research method to conduct a questionnaire survey on the relationship between green supply chain management and corporate competitiveness of Byhealth Co., Ltd. A total of 200 questionnaires were distributed in this survey, and 185 valid questionnaires were collected. The final conclusion is that: customer service, environmental performance, business processes, social responsibility all have a positive affect on corporate competitiveness of Byhealth Co., Ltd.. In order to enhance corporate competitiveness, it is necessary for Byhealth Co., Ltd. to establish green supply chain management awareness and culture while strengthening supplier cooperation and management, and continuously innovating green technologies and management methods.

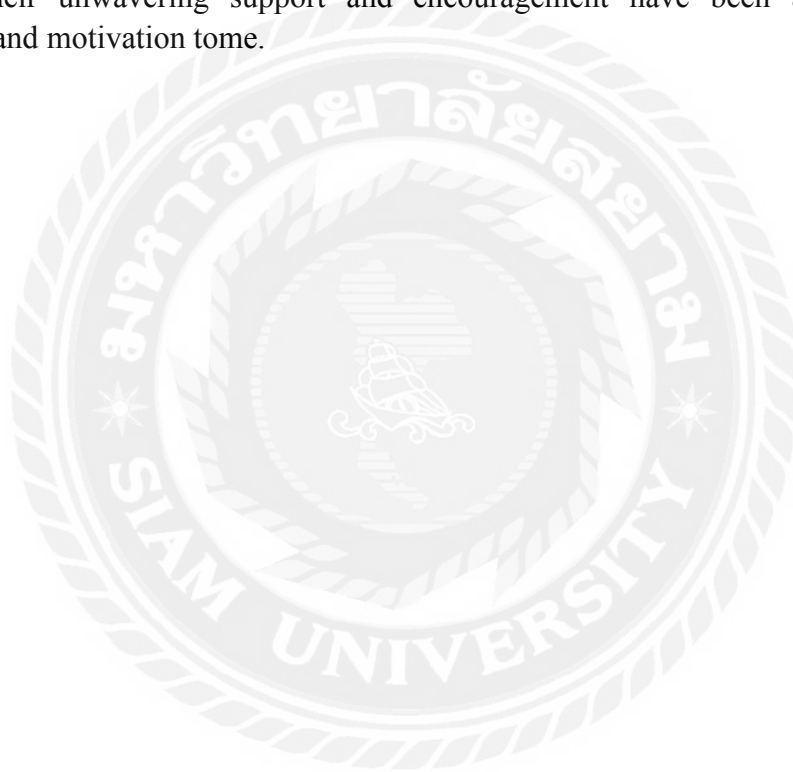
Keywords: green supply chain management, corporate competitiveness, Byhealth Co., Ltd

ACKNOWLEDGEMENT

I would like to express my deepest gratitude to my advisor, for her invaluable guidance, support, and encouragement throughout my independent study. Her insightful comments and constructive criticism have significantly improved the quality of my work.

Additionally, I am grateful to Associate Professor Dr. Jomphong Mongkhonvanit, Dean, Graduate College of Business, for his support and encouragement throughout my studies. His dedication to the graduate program and commitment to excellence have inspired me to strive for academic excellence.

Finally, I would like to extend my appreciation to all the faculty members and staff of the Siam University who have contributed to my growth and development as a student. Their unwavering support and encouragement have been a source of inspiration and motivation to me.



Shen Zhihua

DECLARATION

I, Zhihua Shen, at this moment certify that the work embodied in this independent study entitled “The Impact of Green Supply Chain Management on Corporate Competitiveness of Byhealth Co., Ltd” is a result of original research and has not been submitted for a higher degree to any other university or institution.

Shen zhihua.

Shen Zhihua
(June 8, 2024)



CONTENTS

ABSTRACT	I
ACKNOWLEDGEMENT	II
CONTENTS	IV
LIST OF TABLES	VI
LIST OF FIGURES	VII
Chapter 1 Introduction	1
1.1 Background of the Study	1
1.2 Questions of the Study	3
1.3 Objectives of the Study	3
1.4 Significance of the Study	4
1.5 Scope of the Study	5
1.6 Limitations of the Study	5
1.7 Definition of Key Terms	6
Chapter 2 Literature Review	7
2.1 Introduction	错误! 未定义书签。
2.2 Literature Review	7
2.2.1 Sustainable Development Theory	7
2.2.2 Green Supply Chain Management	8
2.2.3 Corporate Competitiveness	13
2.3 Overview of Byhealth Co., Ltd	16
2.4 Conceptual Framework	17
Chapter 3 Research Methodology	18
3.1 Research Design	18
3.2 Questionnaire Design	18
3.2.1 Green Supply Chain Management Evaluation Index	18
3.2.2 Corporate Competitiveness Evaluation Index	20
3.3 Population and Sample Size	21
3.4 Data Collection	22
3.5 Data Analysis	22
3.6 Hypothesis	错误! 未定义书签。
3.7 Reliability and Validity Analysis of the Scale	23
3.7.1 Reliability Analysis of the Questionnaire	23
3.7.2 Validity Analysis of the Questionnaire	24
Chapter 4 Findings	25
4.1 Introduction	错误! 未定义书签。
4.2 Descriptive Statistical Analysis	25
4.2.1 Descriptive Statistical of Sample	25
4.2.2 Descriptive Statistical of Variables	26
4.3 The Impact of Customer Service on Corporate Competitiveness of Byhealth Co., Ltd	27
4.4 The Impact of Environmental Performance on Corporate Competitiveness of Byhealth Co., Ltd	28
4.5 The Impact of Business Processes on Corporate Competitiveness in Byhealth Co., Ltd	30

4.6 The Impact of Social Responsibility on Corporate Competitiveness of Byhealth Co., Ltd.....	31
Chapter 5 Conclusion and Recommendations.....	33
5.1 Conclusion.....	错误! 未定义书签。
5.1.1 Customer Service has a Positive Impact on Corporate Competitiveness of Byhealth Co., Ltd.....	33
5.1.2 Environmental Performance has a Positive Impact on Corporate Competitiveness of Byhealth Co., Ltd.....	33
5.1.3 Business Processes have a Positive Impact on Corporate Competitiveness of Byhealth Co., Ltd.....	34
5.1.4 Social Responsibility has a Positive Impact on Corporate Competitiveness of Byhealth Co., Ltd.....	35
5.2 Recommendation.....	错误! 未定义书签。
References.....	38
Appendix.....	43



LIST OF TABLES

Table 3.1 Evaluation Index of Green Supply Chain Management.....	19
Table 3.2 Evaluation Index of Corporate Competitiveness.....	20
Table 3.3 Reliability Test Results of the Overall Questionnaire.....	23
Table 3.4 Validity Test Results of the Overall Questionnaire.....	24
Table 4.1 Descriptive Statistics of Samples (N=185)	25
Table 4.2 Descriptive Statistics Analysis of Variables.....	26
Table 4.3 Correlation Analysis of Customer Service and Corporate Competitiveness of Byhealth Co., Ltd.....	27
Table 4.4 Regression Analysis of Customer Service and Corporate Competitiveness of Byhealth Co., Ltd.....	28
Table 4.5 Correlation Analysis of Environmental Performance and Corporate Competitiveness of Byhealth Co., Ltd.....	28
Table 4.6 Regression Analysis of Environmental Performance and Corporate Competitiveness of Byhealth Co., Ltd.....	29
Table 4.7 Correlation Analysis of Business Processes and Corporate Competitiveness in Byhealth Co., Ltd.....	30
Table 4.8 Regression Analysis of Business Processes and Corporate Competitiveness of Byhealth Co., Ltd.....	30
Table 4.9 Correlation Analysis of Social Responsibility and Corporate Competitiveness of Byhealth Co., Ltd.	31
Table 4.10 Regression Analysis of Social Responsibility and Corporate Competitiveness of Byhealth Co., Ltd.	32

LIST OF FIGURES

Figure 1.1 R&D Investment of Byhealth Co., Ltd in 2015-2020 (Unit: Ten Thousand Yuan).....	2
Figure 2.1 Conceptual Framework.....	17



Chapter 1 Introduction

1.1 Background of the Study

With the continuous improvement of people's living standards, it also reflects the continuous improvement of economic level. The continuous expansion of enterprises that promote economic development has also increased the adverse impact of inappropriate production and business activities on the environment. The traditional business philosophy of enterprises is to pursue the maximization of their own interests, resulting in manufacturing enterprises not fully considering the impact of environmental factors in the production process, and the contradiction between enterprise development and environmental protection is deepening (Shi,2017). With the continuous emergence of environmental problems, people's awareness of environmental protection has gradually strengthened, and public opinion's concern for environmental protection and green development has made enterprises pay attention to environmental protection and sustainable development. With the rise of environmental protection, experts and scholars continue to deepen their research on supply chain management. On the basis of traditional supply chain management, environmental protection and sustainable development factors are added to form a new concept - green supply chain management (Verma et al, 2018).

Traditional supply chain management pursues the lowest efficiency and cost, and takes customer demand as the primary goal, but in the process of pursuing the maximization of shareholders' equity, it ignores the potential impact of production behavior on the environment and ecology. This leads to the destruction of society and the environment. At the same time, the benefit orientation in the traditional supply chain also causes the unequal distribution of social resources, which makes the enterprises that pay attention to ecology at a disadvantage in the market competition. However, this model of development that ignores environmental costs is short-lived. With the popularity of the concept of green economy and sustainable development, and the increase of consumers' preference for environmentally friendly consumption, enterprises must carry out green transformation. Therefore, enterprises need to change the traditional model and implement green supply chain management that focuses on environmental protection and ecological harmony (Li et al, 2021). The emergence of green supply chain management meets the requirements of economic development and national policies. It is not only in line with the requirements of sustainable development but also conducive to the healthy development of enterprises, but also to meet the requirements of resource-saving society for enterprises and meet the needs of long-term development of enterprises. It is an important part of the green economy and an important booster for the implementation of the double cycle, which is conducive to the realization of the economic interests of enterprises and the protection of the ecological environment to promote social development (Jaggernath & Khan, 2015).

With the progress of the society development, the awareness of environmental protection is increasing in the minds of the public and enterprises. This environmental awareness is not limited to the company's own operations, but also extends to the entire supply chain management. Supply chain management is a key link in business operations, connecting raw material procurement, production, logistics to the final consumer. In this process, the consumption of resources, the generation of waste, the use of energy have a direct or indirect impact on the environment. As a leading health products company in China, Byhealth Co., Ltd clearly recognizes the importance of green supply chain management. For enterprises such as Byhealth Co., Ltd, the implementation of green supply chain management is not only to meet external environmental regulations and consumer demand, but also to consider the long-term development of the enterprise (Kot, 2018). As can be seen from Figure 1.1, from 2015 to 2019, the R&D investment of Byhealth Co., Ltd has been maintained at about 30 million yuan per year. This is enough to demonstrate the importance of Byhealth to research and development innovation. Only by attaching importance to the research and development of new materials and products can the utilization and reuse of resources be better realized (Gong, 2018). When it comes to sustainability, Byhealth Co., Ltd starts small and designs recyclable packaging. In order to facilitate recycling, a small cap of the product is also designed to not separate from the bottle body. Avoid the use of non-degradable packaging bags, reduce the incineration and burial of white garbage, and achieve the purpose of reducing greenhouse gas production, saving energy and reducing environmental pollution. By reducing resource consumption, reducing waste emissions, and adopting renewable energy sources, Byhealth Co., Ltd aims to improve its environmental performance while enhancing its competitiveness.

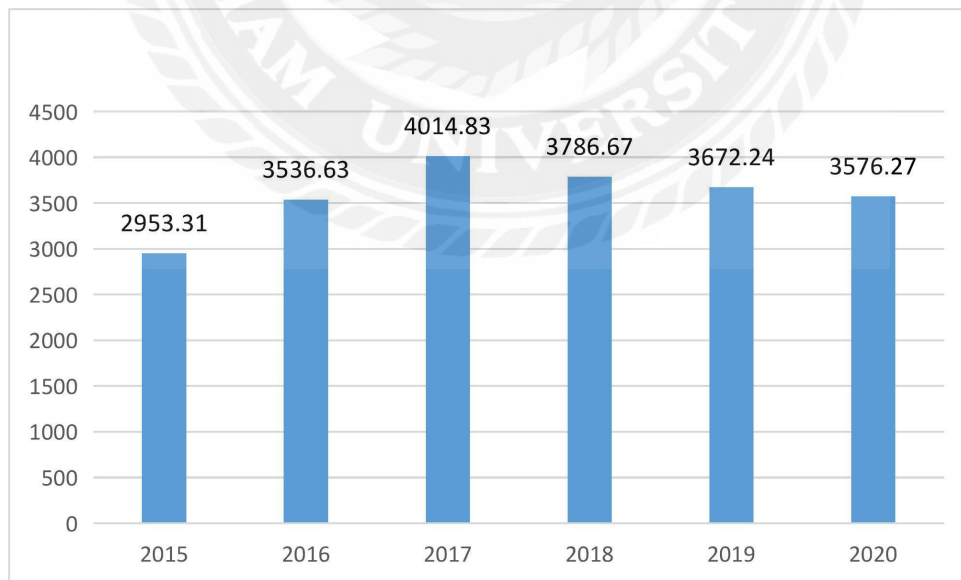


Figure 1.1 R&D Investment of Byhealth Co., Ltd in 2015-2020 (Unit: Ten Thousand Yuan)

The study delves into the realm of green supply chain management (GSCM) within manufacturing enterprises, drawing from the perspective of their practical implementation. It employs empirical analysis of sample data to explore the nexus between GSCM and corporate competitiveness. Additionally, it scrutinizes the interplay between customer service, environmental performance, business processes, social responsibility and corporate competitiveness. The overarching goal is to assist manufacturing enterprises in effectively executing green supply chain strategies, thereby enhancing their GSCM and bolstering their competitive advantage. This research is not merely confined to Byhealth Co., Ltd.; it aspires to offer valuable insights and practical experiences to a broader spectrum of enterprises. The ultimate aim is to guide more businesses towards embracing a green and sustainable development trajectory.

1.2 Questions of the Study

In today's fast-moving business era, the competitiveness of a company often depends on its ability to achieve sustainable operations while meeting the needs of consumers. As public awareness of environmental issues continues to rise, a company's green strategy is no longer a simple slogan, but a key factor for its long-term survival and success (Mathu, 2021). Byhealth Co., Ltd, as a leader in China's health products industry, needs to think about how to integrate green concepts into supply chain management, so as to achieve environmental goals while improving the overall competitiveness of the company. Therefore, this study raises the following research questions:

(1) Does customer service have a positive impact on corporate competitiveness of Byhealth Co., Ltd?

(2) Does environmental performance have a positive impact on corporate competitiveness of Byhealth Co., Ltd?

(3) Do business processes have a positive impact on corporate competitiveness of Byhealth Co., Ltd?

(4) Does social responsibility have a positive impact on corporate competitiveness of Byhealth Co., Ltd?

1.3 Objectives of the Study

In today's business environment, the continued competitiveness of companies increasingly depends on their ability to innovate and adapt to changing market needs and social values. Among them, environmental protection and social responsibility have become important issues that the public and enterprises cannot avoid. As a leader in the domestic health products industry, Byhealth's success is not only based on product and marketing strategies, but also on its adherence to green supply chain

management strategies. Therefore, the main research objectives of this study are:

(1) To investigate the impact of customer service on corporate competitiveness of Byhealth Co., Ltd;

(2) To investigate the impact of environmental performance on corporate competitiveness of Byhealth Co., Ltd;

(3) To investigate the impact of business processes on corporate competitiveness of Byhealth Co., Ltd;

(4) To investigate the impact of social responsibility on corporate competitiveness of Byhealth Co., Ltd.

1.4 Significance of the Study

1. Theoretical significance

The traditional supply chain management theory mainly focuses on how to efficiently realize the logistics process of purchasing raw materials, producing products, and delivering products to consumers. However, with the increasing awareness of environmental protection, people are gradually recognizing the environmental problems that traditional supply chain management may bring. Green supply chain management has emerged, which not only considers economic benefits, but also takes into account factors such as environmental impact, resource efficiency, and social responsibility (Ding, 2022). Byhealth Co., Ltd's green supply chain management practice provides strong empirical support for this theory, and also helps to identify possible deficiencies in the theory and further improve and enrich the content and framework of supply chain management theory. Corporate competitiveness is a relatively abstract concept, which includes many aspects, such as product quality, market share, and brand awareness. However, in the context of sustainable development, corporate competitiveness has been given a new connotation (Lv, 2012). Byhealth Co., Ltd's implementation of green supply chain management not only reduces costs and improves efficiency, but also significantly enhances corporate social responsibility, improves brand image, and thus increases corporate competitiveness. This competitiveness enhancement is not only on the economic level, but also on the social and environmental levels

2. Practical significance

Byhealth Co., Ltd's green supply chain management strategy is proven in practice and is highly operable and replicable. For other companies that are implementing or planning to implement green supply chain management, Byhealth Co., Ltd's experience undoubtedly provides a valuable operational guide. Through in-depth research and study of Byhealth Co., Ltd's practices, companies can learn how to formulate green procurement strategies, select environmentally friendly raw materials, and optimize production processes to reduce environmental impacts, among a series of other specific operational steps, so that they can implement green supply

chain management more smoothly in their actual operations. Green supply chain management not only helps enterprises reduce costs and improve efficiency, but also enhances their competitiveness by strengthening their sense of social responsibility and improving their brand image. Byhealth Co., Ltd's practice can provide a reference for other enterprises. As an industry leader, Byhealth Co., Ltd's green supply chain management practices can drive the entire industry toward a more environmentally friendly and sustainable direction and promote the overall progress of the industry.

1.5 Scope of the Study

This study analyzes the impact of green supply chain management (GSCM) on the corporate competitiveness of Byhealth Co., Ltd. The scope of the study focuses on the four core elements of GSCM: customer service, environmental performance, business processes, and social responsibility, and how they positively affect corporate competitiveness. Through a quantitative research method, this study surveyed 200 questionnaires and collected 185 valid questionnaires to analyze the relationship between GSCM practices and corporate competitiveness. The results of the study show that all four elements positively affect Byhealth Co., Ltd.'s corporate competitiveness, emphasizing the importance of establishing a GSCM awareness and culture, strengthening supplier cooperation and management, and continually innovating green technologies and management methods to enhance corporate competitiveness.

1.6 Limitations of the Study

Sample singularity: This study focused on one enterprise, Byhealth Co., Ltd, and although its green supply chain management practice provides a valuable reference for theoretical research and enterprise practice, it did not represent the actual situation of the whole industry or all enterprises. In the actual business environment, there are many differences between different enterprises in terms of size, geography, culture, and so on. These differences may lead to varying effectiveness and impacts when companies implement green supply chain management.

Data availability: In Byhealth Co., Ltd's green supply chain management practices, access to specific data was limited, mainly due to the company's confidentiality strategy or other legitimate reasons. Due to incomplete or unavailable data, the research results may be somewhat biased or subjective.

Short-term perspective: The improvement of corporate competitiveness is often a gradual and long-term process that cannot be achieved overnight. Similarly, the implementation of green supply chain management needs a certain amount of time to show its full impact on corporate competitiveness. If the study only focuses on the data changes and results in the short term, the long-term impact and potential value

may be overlooked.

Neglecting other influencing factors: Corporate competitiveness is a complex and multidimensional concept, which is influenced by many factors, and green supply chain management is only one of them. In the research process, it may unconsciously focus too much on green supply chain management and neglect other equally important influencing factors, such as changes in the market environment, adjustments in policies and regulations, and the promotion of technological innovation, etc. These factors may directly or indirectly affect the competitiveness of enterprises. All these factors may directly or indirectly affect the competitiveness of enterprises.

1.7 Definition of Key Terms

Green Supply Chain Management (GSCM): The implementation of environmentally benign methodologies throughout the entirety of the supply chain management process, encompassing the stages of raw material procurement, product manufacturing, distribution, transportation, and final consumption and recycling (Zhang, 2018).

Corporate Competitiveness: The ability of an enterprise to gain and maintain an advantage over other enterprises in market competition. This ability is reflected in the enterprise's products, services, brands, technology, management, innovation, cost control, market reaction speed and so on (Pang et al, 2022) .

Customer Service: A range of support and assistance provided by an organization in order to meet customer needs and increase customer satisfaction and loyalty. This includes, but is not limited to, product enquiry, order processing, after-sales service, problem solving, and customer feedback collection (Costantini et al., 2017) .

Environmental Performance: The positive results achieved through environmental protection measures, including the improvement of environmental quality, the reduction of pollutant emissions, the protection of ecosystem diversity, and the enhancement of resource utilization efficiency (Chen, 2022).

Business Processes: The receipt, processing of inputs and delivery of outputs, collaboration between multiple departments and people, and the flow of information, resources and materials (Pang et al, 2022).

Social Responsibility: The obligations and responsibilities of individuals or organizations towards the environment, social and economic development while pursuing economic interests. (Khan et al, 2017).

Chapter 2 Literature Review

2.1 Introduction

This chapter mainly starts from the theory of sustainable development, and discusses the related concepts of green supply chain management and corporate competitiveness respectively. By combining and analyzing the previous research results, it provides theoretical support for the subsequent empirical research on the relationship between green supply chain management and corporate competitiveness.

2.2 Literature Review

2.2.1 Sustainable Development Theory

(1) Conceptual Elaboration

In the nineteen nineties, the United Nations Conference on Environment and Development (UNCED) explicitly proposed in Agenda 21 that every country must maintain global sustainable development, and considered sustainable development as an important issue of contemporary human development. According to the research on sustainable development at home and abroad, it concludes that sustainable development includes three dimensions of economic development, social benefits, and sustainable development of ecological protection in terms of scope, and sustainable development is to achieve the development of economic development, social benefits, and sustainable development of ecological protection in a coordinated and unified manner in the three dimensions (Zhang, 2018). Among them, economic sustainable development is the foundation, ecological sustainable development is the key, and social sustainable development is the ultimate goal. Therefore, the enterprise development of the economy and the formulation of enterprise strategic goals and visions should also be within the scope permitted by the triple rules of economic, ecological, and social sustainable development. The theory of sustainable development is an important concept in the interdisciplinary modern economy and environment. It emphasizes meeting the needs of the present without compromising the ability of future generations to meet their needs. This theory involves the balanced development of the three dimensions of environment, economy and society, and encourages enterprises to actively fulfil their social responsibilities and protect the environment while pursuing economic benefits ((Fang et al 2021). Over the past few decades, a large body of literature has focused on exploring the definitions, principles, frameworks and implementation strategies of sustainable development. In order to achieve sustainable development, it is necessary to change the traditional development model to a more environmentally and socially friendly one. In addition, with the increasing scarcity of global resources and the deterioration of the environment, sustainable development is not only a theory, but also an urgent practical need.

(2) Practical Application

For enterprises, the theory of sustainable development means that they cannot just focus on short-term economic benefits, but also need to consider long-term environmental impacts and social responsibilities (Chen, 2022). Firstly, firms need to develop green and environmentally friendly production strategies to ensure that their products are as environmentally friendly as possible, from raw materials to production to consumption. Secondly, enterprises should actively fulfil their social responsibilities, such as supporting public welfare and providing fair employment opportunities. This will not only enhance the brand image of the enterprise, but also attract more consumers and investors. According to the resource conservation concept of sustainable development, it is necessary to conserve available resources in the process of resource development, replace non-renewable resources with renewable ones, and replace relatively scarce resources with those with large storage capacity. For enterprises to extend the product life, improve resource utilization efficiency and slow down resource consumption through enterprise product maintenance and repair. Enterprises can reduce the energy consumption in each link of the supply chain by carrying out green supply chain management practices. The practice of Byhealth Co., Ltd is a good example. By implementing green supply chain management, it not only improves efficiency and reduces costs, but also enhances corporate social responsibility, which in turn improves competitiveness (Pang et al, 2022). This is a good inspiration for other enterprises: actively adopting sustainable development strategies while pursuing economic benefits is the key to long term survival and prosperous development of enterprises..

2.2.2 Green Supply Chain Management

1. Definition of Green Supply Chain Management

With the acceleration of globalization, supply chain management has become a key aspect of business operations. However, traditional supply chain management often focuses only on aspects such as cost, efficiency and quality, ignoring its negative impact on the environment and society. Against this background, green supply chain has emerged as a new management concept and strategy aimed at achieving the triple bottom line of economy, environment and society (Ying & Li, 2012). Green supply chain is a comprehensive management concept and strategy, the core of which lies in integrating the principles of environmental protection and sustainable development into all aspects of the supply chain. It focuses on the environmental impacts of the entire supply chain, from product design, raw material procurement, production, transport, sales to disposal, all of which are committed to reducing resource consumption, environmental pollution, and promoting sustainable social and economic development. The importance of a green supply chain lies in its ability to integrate the concept of sustainable development throughout the supply chain (Wang & Dai, 2018). Firstly, in the product design stage, green supply chain focuses on choosing environmentally friendly materials and designing sustainable products.

By reducing the use of raw materials and choosing renewable and recyclable materials, the environmental impact of products can be reduced. Secondly, at the procurement and production stages, the green supply chain requires enterprises to select suppliers and manufacturers that meet environmental standards and promote them to adopt environmentally friendly production methods and processes. This can reduce energy consumption, emissions and waste generation, while improving the efficiency of resource utilization. In addition, the green supply chain also focuses on the optimization of transport and logistics links. Energy consumption and greenhouse gas emissions during transport can be reduced by rationally planning transport routes, choosing low-carbon emission transport modes and improving logistics efficiency. Finally, in the stage of product disposal, green supply chain advocates the recycling and reuse of products, promotes the development of circular economy and reduces the dependence on natural resources (Khan et al, 2017).

It is worth mentioning that the implementation of green supply chain management not only helps enterprises to reduce environmental risks, enhance brand image and market competitiveness, but also promotes collaborative innovation and sustainable development of the entire supply chain. Through joint efforts with suppliers, manufacturers, logistics companies and other partners, a green supply chain ecosystem can be formed to achieve resource sharing, complementary advantages and collaborative development of the entire supply chain.

2. Factors related to Green Supply Chain Management

(1) Customer Service

Customers have higher and higher expectations for green supply chain, they not only require product function and quality to meet the demand, but also hope that enterprises will consider environmental protection and sustainable development in supply chain management. Therefore, providing environmentally friendly and healthy supply chain products and services is the key for enterprises to win customers' trust and loyalty in green supply chain. Hitchcock (2012) took the U.S. consumer market as the background, compares the consumer preferences in the U.S. and China, and finds that the low-carbon environmental protection and green factors have the greatest degree of influence on the consumers' purchase intention. Although the national contexts are different, for consumers, all prefer low carbon, environmental and green products. Naoui (2014) presented a case study to assess customer service in supply chain management. He emphasized the interest in an integrated approach that considers customer service performance in an effective way. Laar et al (2016) identified customer demand as an important driver for the realization of in-house Green Supply Chain Management (GSCM) practices. The findings confirm that manufacturers can respond to customer pressures by shifting environmental requirements upstream in the supply chain through co-operation or monitoring suppliers' environmental performance. The results suggest that manufacturers with a combination of strong internal GSCM practices and environmental monitoring at

arm's length from suppliers are likely to perform well on environmental issues. If a company seeks to improve its financial performance, it needs to form more co-operative relationships with its customers in order to achieve environmental goals.

Li (2018) believed that to improve consumer satisfaction, increase customer stickiness, as the supply chain leader of fresh food e-commerce companies need to consider a variety of factors to develop product pricing and service decisions again, corporate competition has been transformed into the supply chain competition, in different competition modes, competitive factors will have an impact on supply chain decision-making. Therefore, e-commerce enterprises should balance the conflict, and develop incentive mechanisms to promote mutual cooperation among supply chain members, so that the entire supply chain system to achieve the unity of purpose. Pei (2020) thought the theory of supply chain cash discount is one of the financial service management contents in sales management, which refers to the pricing method in which the supplier provides product price discounts directly to the end customers instead of providing wholesale price discounts to the retailers, in order to incentivise the demand for the products in the end market (Mao2022). In order to adapt to the requirements of the further development of the future supply chain logistics industry, in the current supply chain logistics service system, the correlation between customer service and customer loyalty has been widely concerned by the society, and to enhance the loyalty by improving the level of customer service is a recognized mode of operation for logistics enterprises. Wang (2022) studied the possible impact of service expectations on offline retailers and manufacturers under a dual-channel supply chain. People's demand for service is more personalized and refined, if the level of service provided is not sufficient to meet customer demand, and if customers do not think what they want, do what they want, or fail to meet their needs, customers will have a "sense of psychological discrepancy", which will lead to a decline in customer satisfaction and loyalty to the retailer, and then lead to a loss of demand.

(2) Environmental Performance

In terms of the environmental performance of green supply chain management, literature review at home and abroad also provides abundant information. Many studies have shown that enterprises can significantly improve their environmental performance, reduce environmental pollution, lower their operating costs and improve their social reputation by implementing green supply chain management. Meanwhile, government and industry organizations have also actively promoted the development of green supply chains for sustainable development. Association et al. (2016) investigated the multidimensional analysis of supply chain environmental performance. It provided an in-depth assessment of the environmental performance of supply chains by collecting and analyzing data and attempted to identify the key factors affecting environmental performance. Tuni et al (2018) found that environmental visibility and traceability in supply chains is limited and environmental impact assessment is mostly restricted to direct business partners. There are trade-offs between the scope of the supply chain and the environmental factors considered, and

there is a lack of a holistic approach to assessing environmental supply chain performance. This study provides the first detailed examination of the links in the supply chain involved in green performance assessment, clarifying the scope of the supply chain in GSCM performance measurement studies. Costantini et al (2017) explored the relationship between social responsibility and sustainable business performance of small and medium-sized enterprises (SMEs) mediated by green innovation and green supply chain management in the context of an emerging economy. It is proposed that in the current demand for sustainable development in a globalized world, green orientation emerges as a strategic direction for firms, increasingly attracting stakeholders due to its significant value for firm viability and sustainability. Omar et al (2019) explored the impact of green supply chain integration on corporate sustainability, analyzing its advantages and challenges and highlighting the importance of corporate sustainability. This provides new perspectives and ideas for supply chain management and corporate management.

Lu & Li (2015) modeled and analyzed closed-loop supply chains to derive optimal pricing and coordination strategies from the perspectives of supply chain profit and environmental performance. The results show that higher profits lead to worse environmental performance; the relationship between retail price and unit recovery price is consistent in both perspectives; and the supply chain targeting environmental performance has relatively less profit but better environmental performance. The same revenue-sharing contract can coordinate both supply chains under different settings. Li (2018) provided an in-depth study of supply chain green innovation practices and their impact on firm performance and competitive advantage. The study provides new perspectives for enterprises to achieve sustainable development and is important for promoting green supply chain management. Huang (2020) identified the relationship between network governance mechanisms and performance based on the structural characteristics of supply networks and complexity operability adjustment variables. Organizational concepts such as transaction costs and social embeddedness help to explain the interaction of environmental factors and enhance environmental improvement performance and green supply chain management significance.

(3) Business Processes

In terms of green supply chain management processes, domestic and international literature reviews have also provided a large number of studies. These studies point out that green supply chain business processes need to be improved in all aspects from product design, procurement, production, distribution and recycling in order to realize the goals of being green, environmentally friendly and sustainable. At the same time, enterprises also need to strengthen cooperation with other supply chain partners to jointly achieve the goal of green supply chain. Govindan (2014) based on hierarchical analysis empirically analyzed the problems of green supply chain management processes in Indian enterprises in terms of technological outsourcing, knowledge innovation, financial management, etc., and analyzed the deficiencies in a

hierarchical manner and discussed the solutions to the problems in various aspects.

Guo et al (2015) introduced the synergy theory to improve the deficiencies of green supply chain management in study-making enterprises. The total process of green supply chain management of study enterprises based on the synergy theory and the sub-processes of strategy, tactics, and technology are designed, and finally the corresponding measures for the improvement of green supply chain management of study enterprises are put forward from the designed process. Cao (2021) found that information sharing in the supply chain synergy has a positive effect on the supply chain operational performance in terms of delivery, flexibility, and product quality, whereas synchronous decision-making has a positive effect on the supply chain operational performance in terms of delivery, flexibility, and product quality. decision-making has a positive effect on lead time, customer service, and product quality in supply chain operational performance, and only incentive alliance has a positive effect on all dimensions of supply chain operational performance. Li & Wang (2022) analyzed the structural characteristics of petrochemical supply chain in five dimensions: financial value, customer service, business process, innovation and development, and green environment protection, and constructed a performance evaluation index system, which is conducive to enhancing the objectivity, accuracy, and scientificity of the green petrochemical supply chain performance evaluation, and indicating a direction to promote the process of greening petrochemical supply chain, and optimizing the supply chain management strategy. direction. Cherrafi et al (2018) investigated the relationship between lean, green and process innovation practices and green supply chain (GSC) performance. Data was collected from 374 manufacturing firms and results analyzed using Structural Equation Modeling (SEM). The findings revealed a synergetic effect between process innovations, green and lean practices, which play a crucial role towards the improvement of GSC performance. GSC performance. Ali (2023) adopted green supply chain practices (GSCP) for SMEs to improve their business process performance (BPP), and it was investigated and studied that GSC performance is positively correlated with BPP and SMEs' performance, and BPP plays an important mediating role in the relationship between GSCP and SMEs' performance.

(4) Social Responsibility

Many studies have also been provided by domestic and international literature reviews in terms of social responsibility in green supply chains. These studies point out that enterprises need to take social responsibility and focus not only on economic benefits but also on environmental protection and social this welfare. Enterprises need to integrate social responsibility into green supply chain management and enhance collaboration with suppliers, distributors and customers to achieve sustainable development. Hsueh (2015) studied a two-level programming model for CSR collaboration in sustainable supply chain management. The study explored how CSR affects sustainable supply chain management and how this relationship can be optimized through a bi-level programming model. Wang et al (2020) investigated the

relationship between CSR, green supply chain management and firm performance and explored the moderating role of big data analytics capabilities. The study emphasized the mediating role of big data analytics between CSR, green supply chain management and firm performance. Nguyen et al (2022) investigated the impact of CSR on green supply chain management and firm performance. The study examined the mediating role of CSR between green supply chain management and firm performance and the moderating role of environmental uncertainty. Han (2020) is a study of green supply chain decision-making and coordination considering CSR under government subsidies, which explores in detail how various factors affect the decision-making and coordination of firms when considering social responsibility. Wang & He (2018) focused on the construction of CSR internal control system oriented towards green supply chain management. They proposed a green supply chain management-oriented internal control system framework, which provides guidance for enterprises to achieve the dual goals of green supply chain management and social responsibility. Zhou & Luo (2021) explored the CSR fulfilment mechanism based on green supply chain by taking Goldwind Technology as an example. By analyzing Goldwind's example, they show how enterprises can fulfil their social responsibility under green supply chain management.

2.2.3 Corporate Competitiveness

1. Definition of Corporate Competitiveness

Competitiveness is a comparative concept. Competitiveness is obtained by comparing an enterprise with its competitors. Competitiveness is essentially a concept that expresses the connotation of today's market economy, that is to say, in the market competition, an enterprise can only obtain its unique competitiveness through the advantage of being stronger than its competitors. Analyze the meaning of corporate competitiveness, not only from the perspective of enterprise competitors also from the perspective of the enterprise's own ability and own resources to define. The main focus is to highlight the enterprise's own ability to obtain resources, as well as to integrate them. Zelga (2017) argues that the competitiveness of an enterprise, from the perspective of production operations, is the ability to produce more efficiently in relation to its competitors. Li et al (2019) defined the competitiveness of an enterprise from the perspective of its own resources and its development. Has some rationality, but overemphasizes endogenous influence. The lack of comparison of competitors is likely to form the result of inaccurate analysis of the enterprise's own current development situation. This results in the tragedy of dying in peace and blind arrogance, and ultimately losing the competitive advantage of the enterprise.

2. Factors related to Corporate Competitiveness

(1) Enterprise Scale

Enterprise scale has an important impact on corporate competitiveness.

Literature review at home and abroad shows that large enterprises have advantages in resources, capital, technology, etc., and can obtain market share and profits more easily. At the same time, SMEs can also have advantages in some specific markets due to their high flexibility. Therefore, expanding the size of enterprises can enhance competitiveness, but it is also necessary to consider various factors such as resources, technology, and market. Xu (2017) explored the relationship between enterprise scale and corporate competitiveness by analyzing two cases, ARM and Walmart. Through the case study, he explored the impact of enterprise size on corporate competitiveness and the advantages and challenges of large enterprises in competition. Chen et al (2021) investigated the diseconomies of scale of retail firms using panel data analysis method. They examined the effects of firm characteristics and competitive environment on firms' economies of scale and analyzed the impact of diseconomies of scale on firms' competitiveness. Schaefer et al. (2021) explored competitiveness assessment as a basis for Brazilian SMEs. They developed a competitiveness assessment model and applied it to SMEs to assess their level of competitiveness and the factors influencing it. Li et al. (2019) explored how green technological innovation capacity affects firm competitiveness. They investigated the impact of firms' green technology innovation capability on competitiveness through surveys and analysis, and explored the mechanisms and pathways of this impact. Ehinomen & Adeleke (2012) explored strategies for repositioning Nigerian SMEs to be competitive in global competition. They analyzed the challenges and opportunities faced by SMEs and suggested strategies and recommendations for improving competitiveness. Taken together, these literatures provide studies on firm size, competitiveness, and competitiveness assessment, which provide useful insights and guidance for understanding and enhancing firm competitiveness.

(2) Economic Growth of Enterprises

The impact of economic growth on corporate competitiveness is also very significant. A healthy economic growth environment can provide enterprises with more opportunities and space for investment, R&D, production, etc., thus improving their competitiveness. However, too fast or too slow economic growth can adversely affect the competitiveness of enterprises. Based on Chinese industry panel data, Jin & Gong(2014) analyzed the impact of economic trends and policy regulation on firms' competitiveness. They examined data from different industries and explored the importance and impact of economic environment and policies on firms' competitiveness.

Liu (2022) focused on how to effectively improve the market competitiveness of enterprise economic management. He explored the key elements and enhancement strategies of corporate competitiveness, including marketing, human resource management, and financial management.

Tang (2018) analyzed the contribution of the top 100 enterprises in Shanghai to the core competitiveness of the Shanghai economy by studying these enterprises. She

explored the impact of factors such as innovation ability, brand value, and international competitiveness of enterprises on the city's economic competitiveness. Gao (2019) explored the improvement of the core competitiveness of Chinese enterprises in international economic trade. He analyzed the competitive position of enterprises in the global market and the importance of international trade, and put forward strategies and suggestions to improve the core competitiveness of enterprises.

The study by Korez-Vide & Tominc (2016) focused on the relationship between competitiveness, entrepreneurship and economic growth. They explored the impact of competitiveness and entrepreneurship on economic growth and proposed measures to improve entrepreneurial activities and competitiveness in order to promote economic development. The study by Khyareh & Rostami (2018) explored the impact of competitiveness and entrepreneurship on economic growth. They examined data from different countries and regions and analyzed the correlation and role of competitiveness and entrepreneurship on economic growth. Camilleri (2018) explored the importance of fostering tourism and hospitality businesses for economic growth and competitiveness. He emphasizes the role of developing tourism and hospitality industries in promoting economic growth, job creation, and urban competitiveness. Taken together, this literature provides research on economic management, policy regulation, market competitiveness, and core competitiveness of firms, which provides useful insights and guidance for understanding and improving the competitiveness of firms.

(3) Operational Efficiency of Enterprises

The operational efficiency of an enterprise directly affects its costs and revenues, and thus its competitiveness. Effective management, advanced production technology, and good supply chain management can all improve an enterprise's operational efficiency. Literature review shows that many firms have already improved their competitiveness by improving operational efficiency to reduce costs and increase profits.

Golovchenko et al (2022) focused on the management of firm efficiency and competitiveness and provide insights about the importance of managing efficiency and competitiveness in firms. They explore aspects of efficiency and competitiveness management in different firms, such as how to be competitive in different markets, how to effectively manage resources to increase efficiency, and how to develop strategies to improve the overall competitiveness of the firm. Yanton-Drozdovska (2020) examined the international competitiveness of firms, including how to improve the quality and reliability of their products and services, how to establish their brand and reputation in globalized markets, and how to satisfy consumer needs. Panasenko et al (2020) addressed technology service systems for firms to improve efficiency and competitiveness. They provide a model for integrating technology and managed services to help large and small and medium-sized enterprises to realize business

purposes and improve competitiveness. Mantje et al (2023) focused on the role of KM in firm competitiveness, with particular emphasis on the mediating role of operational efficiency in KM practices. They explored how KM can be applied in firms to improve their efficiency and competitiveness.

Yang (2014) focused on the evaluation of operational efficiency of electric power enterprises in a low-carbon environment. He discussed how to improve the competitiveness of enterprises in a low-carbon society by improving operational efficiency and reducing environmental impacts. Chen (2021) investigated the relationship between the working capital management efficiency of enterprises and the company's business performance. By analyzing and evaluating the market and working capital, she provided suggestions to improve working capital management efficiency in order to improve the company's business performance. Huang (2019) examined the financial operational efficiency of listed companies in the engineering consulting industry based on the DEA model. By analyzing the financial data of the companies, he revealed the key factors affecting the financial operational efficiency of the companies and proposed strategies to improve the financial operational efficiency. Taken together, the studies in these literatures provide an in-depth understanding of the key factors of efficiency and competitiveness management, and offer guidance on a variety of research methods and practical applications that can help firms improve efficiency and competitiveness.

2.3 Overview of Byhealth Co., Ltd

Byhealth Co., Ltd was founded in 1995, and its official website is <http://www.Byhealth Co., Ltd.com/>. In 2002, Byhealth Co., Ltd systematically introduced dietary supplements (VDS) into China's non-direct selling field, and on December 15, 2010, Byhealth Co., Ltd was listed on the GEM board of the Shenzhen Stock Exchange, and has rapidly grown to become China's leading dietary supplement brand and benchmarking. In 2018, Byhealth Co., Ltd acquired Life-Space, an Australian probiotic brand, and in May of the same year, acquired Pentavite, a children's nutritional supplement brand with a history of more than 80 years under the banner of Bayer.

According to Euromonitor data, Byhealth Co., Ltd was ranked first in China's vitamins and dietary supplements industry in 2020 with a 10.3% market share. Byhealth Co., Ltd has gradually developed into a global leader in the dietary supplement industry. 2021, Byhealth Co., Ltd has become the supplier of sports food and nutritional products to the TEAM CHINA China National Team, supplying sports food, nutritional products and professional nutritional preparation programs to athletes of more than 70 national teams. Byhealth Co., Ltd implements the "Scientific Nutrition" strategy, which aims to create the ultimate scientific nutritional products in the spirit of science. Relying on modern nutritional science, Byhealth Co., Ltd has established a comprehensive scientific system for dietary supplements. Byhealth Co.,

Ltd works with the Netherlands National Institute of Applied Sciences, the Shanghai Institute of Nutrition and Health of the Chinese Academy of Sciences and other cutting-edge scientific researchers around the world to conduct research on scientific nutrition and nutritional interventions for chronic diseases. Byhealth Co., Ltd has implemented a strategy of developing its own core technologies and patented raw materials, and has continued to build on the scientific and technological strengths and differentiated competitive advantages of Byhealth Co., Ltd's products. To date, Byhealth Co., Ltd has developed more than 30 types of customized raw materials and has obtained more than 60 invention patents for raw materials and formulas.

Byhealth Co., Ltd's "Scientific Nutrition" strategy focuses on the development of new testing technologies, evaluation methods, health data, functional products, knowledge maps, and intelligent algorithms related to precision nutrition. Byhealth Co., Ltd's Transparent Factory is open to all sectors of the industry in a sunny and transparent manner. Byhealth Co., Ltd has a laboratory accredited by the China National Accreditation Service for Conformity Assessment (CNAS), which has developed a number of high-standard testing programs. Byhealth Co., Ltd's Transparent Factory has introduced over 150 sets of globally renowned equipment from more than 10 countries, and has the industry's first intelligent production line for continuous solid dosage forms, pioneering the industry's leading continuous and intelligent production line, with global raw material traceability and a transparent production process. Byhealth Co., Ltd creates high-quality nutritional products around the globe through rigorous quality control management and leading-edge precision and intelligence manufacturing.

2.4 Conceptual Framework

According to the research objectives and related literature research, the conceptual framework of this study is as follows:

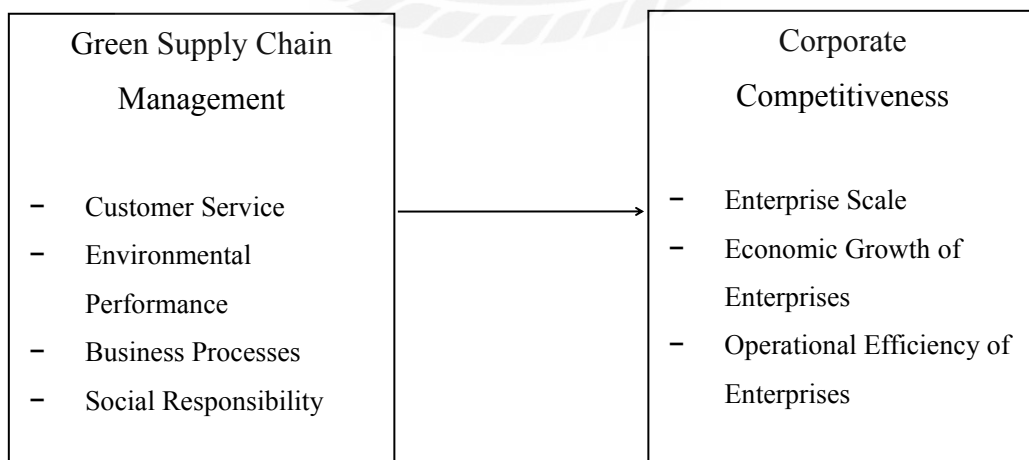


Figure 2.1 Conceptual Framework

Chapter 3 Research Methodology

3.1 Research Design

This study used the quantitative analysis method to explore the impact of Byhealth Co., Ltd's green supply chain management on corporate competitiveness. The chapter first clarifies the research design and the questionnaire design, and then explains the number of samples and data collection methods to ensure the reliability and effectiveness of the data. Finally, the reliability and validity of the survey scale are carefully analyzed to ensure the accuracy and credibility of the research results.

3.2 Questionnaire Design

A questionnaire was designed to collect the views and experiences on green supply chain management and corporate competitiveness. The questionnaire involves green supply chain management (customers service, environmental performance, business processes, social responsibility); corporate performance (enterprise scale, economic growth of enterprises, operational efficiency of enterprises). Through a questionnaire survey, a large number of quantitative data can be obtained for subsequent data analysis.

The question design in the questionnaire adopted Likert's five-point scale, that is, each question has five options, from "very different" to "very agree", corresponding to 1 to 5 points respectively. The application of Likert five-point scale makes the data more quantitative and convenient for statistical analysis. At the same time, the five-point scale also provides enough discrimination to reflect the attitudes and opinions of respondents in more detail.

3.2.1 Green Supply Chain Management Evaluation Index

The evaluation index of green supply chain management is an important basis for enterprises to formulate green supply chain strategy and management, and also an important means for enterprises' sustainable development. Huang et al. (2007) used expert evaluation method to divide the supply chain evaluation indexes of enterprises, which was customer service, operating cost, business process and environmental performance of accounting management. On this basis, using the existing supply chain management evaluation index and environmental performance index for reference, a multi-level index evaluation system model of enterprise green supply chain management is established by using fuzzy evaluation method. Therefore, this study mainly draws lessons from Huang et al's (2007) related elaboration on the evaluation index of green supply chain, and finally determines the evaluation model of green supply chain evaluation in this study. Customer service refers to the degree to which the supply chain meets customer needs, including the quality of order completion, the accuracy of delivery time, and the reliability of products and services. Environmental performance reflects the effect of environmental protection measures

in the supply chain, including the efficiency of resource utilization, the degree of waste reduction, the implementation effect of environmental protection policies, and the ability of sustainable development. Business processes mean that the green supply chain also pays attention to the greening of business processes, that is, to minimize the impact of business processes on the environment, including energy consumption, raw material handling and storage efficiency, and information transmission efficiency. Social responsibility refers to the responsibility of enterprises to all social parties, such as employees, suppliers, communities and the environment, including the implementation of employees' health and safety policies, the fulfillment of suppliers' social responsibilities, and the fulfillment of responsibilities for the impact on the community environment.

Table 3.1 Evaluation Index of Green Supply Chain Management

Primary index	Secondary index	Option
Evaluation index of green supply chain management	Customers Service	The order fulfillment quality of our company is very high.
		Our company can always deliver the goods within the promised time.
		There are few problems with our products and services, and problems can be solved quickly.
	Environmental Performance	There are few problems with our products and services, and problems can be solved quickly.
		Our company has been trying to reduce the waste in the production process.
		Our company has been actively promoting environmental protection policies to protect the environment.
		Our company has been taking various measures to ensure the long-term development of the company.
	Business Processes	Our company has been working hard to reduce energy consumption in the production process.
		Our company can always carry and store raw materials quickly and effectively.
		The information of our company can always be conveyed to all departments and employees in a timely and accurate manner.
	Social	Our suppliers have performed very

	Responsibility	well in protecting employees' rights and interests, environmental protection and so on.
		Our suppliers always follow social ethics and pay attention to social responsibility.
		Our suppliers always committed to reducing the negative impact on the community environment and take the initiative to assume corresponding responsibilities.

3.2.2 Corporate Competitiveness Evaluation Index

An enterprise is an organizational structure established for the purpose of profit, and the way for an enterprise to obtain profit is the process of establishing competition, so how to determine the composition dimension of corporate competitiveness is also very important. This study summarizes the evaluation system of corporate competitiveness by studying the connotation of corporate competitiveness and the influencing factors of corporate competitiveness. This study mainly draws lessons from Jin's (2005) dominant factors in corporate competitiveness to reflect the strength of corporate competitiveness, and refers to Li 's (2004) study on the influencing factors of corporate competitiveness, which concludes that export trade income accounts for the proportion of sales income and has little influence on competitiveness. Finally, the quantifiable evaluation index model of corporate competitiveness is obtained: first, the scale index owned by the enterprise, including its financial sales revenue, net assets and net profit; The second is the growth indicators owned by the enterprise, including the growth rate of sales revenue and the growth rate of net profit in the past three years; The third is the efficiency index of enterprise operation, including net profit rate, return on total assets, and overall labor productivity.

Table 3.2 Evaluation Index of Corporate Competitiveness

Primary index	Secondary index	Option
Evaluation index of corporate competitiveness	Enterprise Scale	Our company believes that sales revenue is an important indicator of business performance, and it will continue to improve to achieve long-term development.
		Our company carefully manages its net assets to ensure financial stability, liquidity and solvency.
		Our company's net profit level is

		relatively high, showing efficient operation and management capabilities.
	Economic Growth of Enterprises	Our company's sales revenue has increased steadily in the past three years, which verifies the effectiveness of market position and business strategy.
		Our company's net profit has increased steadily in the past three years, reflecting the continuous improvement ability of management and cost control.
	Operational Efficiency of Enterprises	Our company has a high rate of return on net profit, which shows strong investment decision-making and asset allocation ability and creates more value for the company.
		Our company's return on total assets is excellent, which shows the ability to use assets efficiently and achieve profit targets, and effectively control operational and financial risks.
		Our company pays attention to improving the labor productivity of all employees, and enhances its competitiveness and sustainable development ability by optimizing processes, upgrading skills and introducing technology.

3.3 Population and Sample Size

This survey was mainly aimed at the internal personnel of Byhealth Co., Ltd, including management personnel, technical research and development personnel, logistics personnel, sales personnel and so on. These people play an important role in the company's operation and supply chain management, and their understanding and practical experience of green supply chain management is of key significance for studying the relationship between Byhealth Co., Ltd's green supply chain management and corporate competitiveness. In this study, 200 respondents were randomly selected to participate in the survey through online or offline questionnaires. Through the investigation of these insiders, this study can have a deeper understanding of Byhealth Co., Ltd's green supply chain management strategy, implementation and its impact on the competitiveness.

3.4 Data Collection

In order to explore the the impact of green supply chain management on corporate competitiveness, this study used questionnaire survey to collect data. A total of 200 questionnaires were distributed in this survey, and 185 valid questionnaires were successfully recovered. A large number of quantitative data were collected through questionnaire survey, which is convenient for statistical analysis and verification of research hypotheses. In the process of data collection, it is very important to ensure the rationality and accuracy of questionnaire design to ensure the quality and reliability of data. Finally, by analyzing and processing the data of these 185 questionnaires, this study further reveal the relationship between Byhealth Co., Ltd's green supply chain management and corporate competitiveness, and provide valuable reference for enterprises to improve supply chain management and enhance their competitiveness.

3.5 Data Analysis

Data analysis methods play an important role in exploring the relationship between green supply chain management and corporate performance. Correlation analyses were conducted using SPSS to reveal the degree of closeness and direction of the relationship, and to gain a preliminary understanding of the correlation between green supply chain management (customer service, environmental performance, business processes, social responsibility) and corporate performance (firm size, firm economic growth, and firm operational efficiency).

To gain a deeper understanding of the causal relationships between these variables, regression analyses were conducted using SPSS. By constructing models, this approach can clarify the specific impact of different dimensions of green supply chain management on corporate performance. For example, regression analyses can quantify the extent of environmental performance on business performance, which can help companies develop targeted strategies.

3.6 Hypothesis

When an enterprise implements green supply chain management, it not only pays attention to the production and sales of products, but also pays attention to the environmental impact of the whole supply chain. Therefore, green supply chain management can make enterprises pay more attention to environmental protection and social responsibility, improve their reputation and image, and enhance their market competitiveness. Therefore, the research hypotheses can be drawn as follows:

H1: There is a correlation between the customer service and corporate

competitiveness of Byhealth Co., Ltd;

H2: There is a correlation between the environmental performance and corporate competitiveness of Byhealth Co., Ltd;

H3: There is a correlation between the business processes and corporate competitiveness of Byhealth Co., Ltd;

H4: There is a correlation between the social responsibility and corporate competitiveness of Byhealth Co., Ltd;

3.7 Reliability and Validity Analysis of the Scale

3.7.1 Reliability Analysis of the Questionnaire

Reliability refers to the consistency and stability of research results. In the context of Byhealth Co., Ltd, the reliability analysis examined whether the results of the questionnaire survey are consistent and reliable. Reliability of internal consistency: Cronbach's Alpha coefficient was used to test the consistency of each question in the questionnaire. Generally speaking, Cronbach's Alpha greater than 0.7 is considered acceptable. The specific analysis results are shown in Table 3.3:

Table 3.3 Reliability Test Results of the Overall Questionnaire

Items	Cronbach's α	N of Items
Customers Service	0.798	3
Environmental Performance	0.813	4
Business Processes	0.796	3
Social Responsibility	0.802	3
Corporate Competitiveness	0.901	8

The results of the reliability analysis in Table 3.3 show that the Cronbach's α values of all items are greater than 0.7, which indicates that the questionnaire has a high internal consistency reliability. A Cronbach's α coefficient of more than 0.8 is usually regarded as very good, which indicates that the consistency of the questionnaire among the questions is very high, and the stability of the measurements is also very good. Meanwhile, a total of 21 items (questions) were involved in the reliability analysis, and these items together contributed to a high reliability coefficient. This indicates that the questions in the questionnaire are well-designed and can comprehensively reflect the relationship between green supply chain management and enterprise competitiveness of Baijian Paper Co. In conclusion, the questionnaire has a good reliability, which ensures the stability and reliability of the research results.

3.7.2 Validity Analysis of the Questionnaire

Validity refers to the degree to which research tools (such as questionnaires) can accurately measure the required research content and determine whether the content of the questionnaire fully covers all relevant fields of Byhealth Co., Ltd's green supply chain management and corporate competitiveness. Through careful examination of each question in the questionnaire, it is shown that the questions cover the practice of green supply chain management and the measurement index of corporate competitiveness. The reliability analysis results of this survey are shown in Table 3.4 below:

Table 3.4 Validity Test Results of the Overall Questionnaire

The KMO Values and the Bartlett Spheroid Test		
Number of KMO sampling suitability quantities		0.821
The sphericity test of the Bartlett	Approximate chi-square	2020.125
	df	203
	Sig.	0.000

As can be seen from Table 3.4, In the process of evaluating data validity, the KMO value obtained in this study is 0.821. KMO value is used to test the partial correlation between variables, and the value range is 0-1. Generally speaking, KMO value greater than 0.8 is considered as good, indicating that the sample size is moderate and the result of factor analysis will be better. The Approximate chi-square is 2020.125, the degree of freedom (df) is 203, and the Significance (sig.) is 0.000. Bartlett sphere test is used to test whether the correlation matrix is identity matrix, that is, whether each variable is independent. In this example, the value of Sig. is 0.000, which is less than the significance level (usually 0.05 or 0.01), indicating that the correlation matrix is not identity matrix and rejecting the original hypothesis, which means that the data is suitable for factor analysis. On the whole, KMO value and Bartlett sphere test results show that the data are suitable for factor analysis, which further verifies the reliability of the questionnaire. Therefore, it can be considered that the questionnaire has good reliability and structural validity, and can accurately measure the relationship between Byhealth Co., Ltd's green supply chain management and corporate competitiveness.

Chapter 4 Findings

4.1 Introduction

On the basis of the research design and data collection, this chapter mainly analyzes and summarizes the relevant data of Byhealth Co., Ltd's green supply chain management and corporate competitiveness, and finally verifies the validity of the hypotheses.

4.2 Descriptive Statistical Analysis of Variables

4.2.1 Descriptive Statistical of Sample

The basic information of the sample mainly includes gender, age, profession, and tenure. Table 4.1 below shows the following:

Table 4.1 Descriptive Statistics of Sample (N=185)

Survey Items	Category	Number of people	Percentage (%)
Gender	Male	102	55.1
	Female	83	44.9
Age	Under 25 years old	45	24.3
	36-35 years old	70	37.8
	36-45years old	32	17.4
	45 years old or above	38	20.5
Profession	administrative staff	27	14.6
	Technical research and development personnel	65	35.1
	Logistics personnel	58	31.4
	salesman	35	18.9
Tenure	Less than 2 years	53	28.6
	3-5 years	fifty-six	30.3
	6-8 years	40	21.6
	More than 8 years	36	19.5

The survey covers data on gender, age, profession and tenure time. In terms of gender, male employees account for 55.1% and female employees account for 44.9%. In terms of age distribution, employees under 25 account for 24.3%, employees aged 26-35 account for 37.8%, employees aged 36-45 account for 17.4%, and employees aged 45 and above account for 20.5%. Professionally, managers account for 14.6%, technical R&D personnel account for 35.1%, logistics personnel account for 31.4%, and sales personnel account for 18.9%. In terms of tenure time, employees with less than two years account for 28.6%, employees with three to five years account for

30.3%, employees with five to seven years account for 21.6%, and employees with more than seven years account for 19.5%. This table provides a detailed overview of the internal personnel structure of Byhealth Co., Ltd, and provides basic data for further analysis of the relationship between green supply chain management and corporate competitiveness of Byhealth Co., Ltd's.

4.2.2 Descriptive Statistical of Variables

This study made a descriptive statistical analysis on two indicators of Byhealth Co., Ltd's green supply chain management and corporate competitiveness, and the specific analysis results are shown in Table 4.2:

Table 4.2 Descriptive Statistical Analysis of Variables

Scale	Dimension	Sample	Minimum	Maximum	Mean	Standard deviation
Evaluation index of green supply chain	Customers Service	185	1.50	5.00	3.25	0.56
	Environmental Performance	185	2.20	5.00	3.60	0.75
	Business Processes	185	1.35	5.00	3.15	0.37
	Social Responsibility	185	2.20	5.00	3.75	0.83
Evaluation index of corporate competitiveness	Enterprise scale	185	1.00	5.00	3.00	0.42
	Economic Growth of Enterprises	185	1.20	5.00	2.60	0.32
	Operational Efficiency of Enterprises	185	1.35	5.00	3.15	0.37

Firstly, for the evaluation index of green supply chain management: in the dimension of customer service, the sample size is 185, the minimum value is 1.50, the maximum value is 5.00, the average value is 3.25, and the standard deviation is 0.56. This shows that most customers' scores are concentrated near the average and the distribution is relatively normal. In the dimension of environmental performance, the average value is 3.60, which is slightly higher than the average value of customer service, indicating that it performs relatively well in the environment. The average value of the business process dimension is 3.15, which is similar to the customer service dimension, but the standard deviation is smaller, indicating that the data is more concentrated. The average value of social responsibility dimension is the highest, which is 3.75, and the standard deviation is relatively large, which means that enterprises have different performances in social responsibility.

Secondly, for the evaluation index of corporate competitiveness: the average enterprise scale is 3.00, and the standard deviation is small, indicating that most enterprises have medium and concentrated scale scores. The average value of enterprise economic growth is relatively low, at 2.60, which may indicate that the overall economic growth is not strong enough. The average operational efficiency of an enterprise is the same as that of the business process dimension, which is 3.15, and the standard deviation is the same, indicating that the operational efficiency is medium and the data distribution is concentrated.

Taken together, the data provide us with the performance of Byhealth Co., Ltd. in green supply chain and competitiveness. In terms of green supply chain management, the scores of social responsibility and environmental performance are relatively high, while in terms of competitiveness, the scores of enterprise scale and operational efficiency are medium. On the basis of these indicators, enterprises need to further improve their performance in all aspects to enhance their green supply chain and corporate competitiveness.

4.3 The Impact of Customer Service on Corporate Competitiveness of Byhealth Co., Ltd

Table 4.3 Correlation Analysis of Customer Service and Corporate Competitiveness of Byhealth Co., Ltd

Dimension	Order completion quality	Accuracy of delivery time	Reliability of products and services
Order completion quality	1		
Accuracy of delivery time	.814**	1	
Reliability of products and services	.820**	.817**	1

From the correlation analysis in Table 4.3, the accuracy of delivery time and the reliability of products and services of Byhealth Co., Ltd. is very close, and there is a significant positive correlation. Specifically, the displayed data are: the correlation coefficient between order completion quality and delivery time accuracy is 0.814**, the correlation coefficient between order completion quality and product and service reliability is 0.820**, and the correlation coefficient between delivery time accuracy and product and service reliability is 0.817**. These figures show that improving the quality of order completion, the accuracy of delivery time and the reliability of products and services are statistically significant for enhancing the competitiveness of the enterprises.

Table 4.4 Regression Analysis of Customer Service and Corporate Competitiveness of Byhealth Co., Ltd

	Non-standardized coefficient		Standardized coefficient	t	p	R ²	Adjusting R ²	F
	B	Standard Error	Beta					
(Constant)	.516	.103	-	4.653	.000	.524	.512	210.260
Customer Service	.718	.054	.720	17.213	.000			

Table 4.4 shows the results of regression analysis between customer service and enterprise competitiveness of Byhealth Co., Ltd. The data show that the non-standardized coefficient of customer service variables is 0.718, the standardized coefficient is 0.720, and the P value is 0.000, which is highly significant. This shows that customer service plays a very important role in improving the competitiveness of enterprises. Through regression analysis, this study can see that the standardization coefficient of customer service is 0.720, which means that the competitiveness of enterprises increases by 0.720 units for every unit of customer service. From the adjusted R² value, the regression model can explain 52.4% of the change of enterprise competitiveness, which is a relatively high value. To sum up, customer service has a correlation with the competitiveness of Byhealth Co., Ltd.. Therefore, "H1: There is a correlation between the customer service and corporate competitiveness of Byhealth Co., Ltd" is established.

4.4 The Impact of Environmental Performance on Corporate Competitiveness of Byhealth Co., Ltd

Table 4.5 Correlation Analysis of Environmental Performance and Corporate Competitiveness of Byhealth Co., Ltd.

Dimension	Resource utilization efficiency	Degree of waste reduction	Implementation of environmental protection policy	Sustainable development ability
Resource utilization efficiency	1			
Degree of waste reduction	.826**	1		
Implementation of environmental protection policy	.823**	.720**	1	
Sustainable development ability	.810**	.817**	.820**	1

According to the results of correlation analysis in Table 4.5, there is a significant positive correlation between environmental performance of Byhealth Co., Ltd. and resource utilization efficiency, waste reduction degree, environmental protection policy implementation and sustainable development ability. The specific data are as follows: the correlation coefficient between resource utilization efficiency and waste reduction degree is 0.826**, the correlation coefficient between resource utilization efficiency and environmental protection policy implementation is 0.823**, and the correlation coefficient between resource utilization efficiency and sustainable development ability is 0.810**. The correlation coefficient between waste reduction degree and environmental protection policy implementation is 0.720**, and the correlation coefficient between waste reduction degree and sustainable development ability is 0.817**. The correlation coefficient between environmental protection policy implementation and sustainable development capacity is 0.820**. These data show that the efficiency of resource utilization, the degree of waste reduction, the implementation of environmental protection policies and the ability of sustainable development are closely related to the competitiveness of the enterprise.

Table 4.6 Regression Analysis of Environmental Performance and Corporate Competitiveness of Byhealth Co., Ltd.

	Non-standardized coefficient		Standardized coefficient	t	p	R ²	Adjusting R ²	F
	B	Standard Error	Beta					
(Constant)	.515	.112	-	5.834	.000	.510	.476	188.313
Environmental Performance	.740	.063	.638	13.241	.000			

According to Table 4.6, the data show that the non-standardized coefficient of environmental performance variable is 0.740, the standardized coefficient is 0.638, and the p value is 0.000, which is highly significant. this shows that environmental performance also plays an important role in improving the competitiveness of enterprises. through regression analysis, this study shows that the standardization coefficient of environmental performance is 0.638, which means that the competitiveness of enterprises increases by 0.638 units for every unit of policies and regulations. from the adjusted R² value, the regression model can explain 47.6% of the change of enterprise competitiveness. to sum up, there is a correlation between environmental performance and enterprise competition. Therefore, "H2: There is a correlation between the environmental performance and corporate competitiveness of Byhealth Co., Ltd." is established.

4.5 The Impact of Business Processes on Corporate Competitiveness in Byhealth Co., Ltd.

Table 4.7 Correlation Analysis of Business Processes and Corporate Competitiveness in Byhealth Co., Ltd.

Dimension	energy consumption	Efficiency of raw material handling and storage	Information transmission efficiency
Energy consumption	1		
Efficiency of raw material handling and storage	.820**	1	
Information transmission efficiency	.827**	.811**	1

According to the results of correlation analysis in Table 4.7, there is a significant positive correlation among energy consumption, raw material handling and storage efficiency and information transmission efficiency in the business processes of Byhealth Co., Ltd. The specific data are as follows: the correlation coefficient between energy consumption and raw material handling and storage efficiency is 0.820**, the correlation coefficient between energy consumption and information transmission efficiency is 0.827**, and the correlation coefficient between raw material handling and storage efficiency and information transmission efficiency is 0.811**. These data show that optimizing energy consumption, raw material handling and storage efficiency and information transmission efficiency in business processes are closely related to the competitiveness of the enterprise.

Table 4.8 Regression Analysis of Business Processes and Corporate Competitiveness of Byhealth Co., Ltd.

	Non-standardized coefficient		Standardized coefficient	t	p	R ²	Adjusting R ²	F
	B	Standard Error	Beta					
(Constant)	.613	.112	-	5.524	.000	.510	.431	214.326
Business Processes	.734	.062	.616	12.261	.000			

In the regression analysis in Table 4.8, the non-standardized coefficient of business processes variables is 0.734, the standardized coefficient is 0.616, and the P value is 0.000, which is highly significant. This shows that business processes also play a very important role in improving the competitiveness of enterprises. Through regression analysis, this study proves that the standardization coefficient of business processes is 0.616, which means that the competitiveness of enterprises increases by

0.616 units for every unit of business process improvement. From the adjusted R² value, the regression model can explain 43.1% of the change of enterprise competitiveness. To sum up, there is a correlation between business processes and competitiveness of Byhealth Co., Ltd., therefore, it is assumed that "H3: There is a correlation between the business processes and corporate competitiveness of Byhealth Co., Ltd." is established.

4.6 The Impact of Social Responsibility on Corporate Competitiveness of Byhealth Co., Ltd.

Table 4.9 Correlation Analysis of Social Responsibility and Corporate Competitiveness of Byhealth Co., Ltd.

Dimension	Implementation of employee health and safety policies	Supplier's social responsibility fulfillment	Fulfillment of responsibility for community environmental impact
Implementation of employee health and safety policies	1		
Supplier's social responsibility fulfillment	.819**	1	
Fulfillment of responsibility for community environmental impact	.729**	.831**	1

According to the results of correlation analysis in Table 4.9, there is a significant positive correlation between the social responsibility performance of Byhealth Co., Ltd. and the implementation of employee health and safety policies, the social responsibility performance of suppliers and the responsibility performance of community environmental impact. The specific data are as follows: the correlation coefficient between employee health and safety policy implementation and social responsibility performance is 0.819**, the correlation coefficient between supplier's social responsibility performance and social responsibility performance is 0.831**, and the correlation coefficient between community environmental impact responsibility performance and social responsibility performance is 0.729**. These data show that the performance of social responsibility of Byhealth Co., Ltd. is closely related to the competitiveness of the enterprise.

Table 4.10 Regression Analysis of Social Responsibility and Corporate Competitiveness of Byhealth Co., Ltd.

	Non-standardized coefficient		Standardized coefficient	t	p	R ²	Adjusting R ²	F
	B	Standard Error	Beta					
(Constant)	.523	.090	-	4.824	.000	.508	.526	213.170
Social Responsibility	.754	.052	.740	14.231	.000			

From the data analysis in Table 4.10, it can be seen that the coefficient of influence of social responsibility on the competitiveness of enterprises is 0.754, which means that the competitiveness score of enterprises increases by 0.754 units for every unit of social responsibility. The standardization coefficient (Beta) is 0.740, which indicates that social responsibility has a great influence on the competitiveness of enterprises. The t value is 14.231 and the p value is 0.000, which shows that the influence of social responsibility on the competitiveness of enterprises is very significant in the model. R² value is 0.508, which means that the model can explain 50.8% variation of enterprise competitiveness score. The adjusted R² value is 0.526, which shows that the explanatory power of variables in the model has been improved. The value is 213.170, which shows that the overall significance of the model is high, and social responsibility has a significant positive impact on the competitiveness of Byhealth Co., Ltd. Therefore, "H4: There is a correlation between the social responsibility and corporate competitiveness of Byhealth Co., Ltd." is established.

Chapter 5 Conclusion and Recommendations

This chapter summarizes and discusses the analysis results of the relationship between Byhealth Co., Ltd's green supply chain management and corporate competitiveness, and puts forward corresponding development suggestions.

5.1 Conclusion

5.1.1 Customer Service has a Positive Impact on Corporate Competitiveness of Byhealth Co., Ltd

There is a significant positive correlation between order fulfillment quality, delivery time accuracy and product and service reliability, with correlation coefficients of 0.814**, 0.820** and 0.817**, respectively. Improving the performance of these aspects can help enhance the competitiveness of enterprises. In addition, customer service plays a very important role in improving the competitiveness of enterprises, and the standardization coefficient is 0.720, and the competitiveness of enterprises will be improved by 0.720 units for every unit of customer service. The regression model explains 52.4% of the change of enterprise competitiveness, and there is a correlation between customer service and enterprise competitiveness.

Customer service is the key link of communication between enterprises and consumers, and it is crucial to the competitiveness of enterprises. Quality customer service can effectively meet consumer needs, improve consumer satisfaction and loyalty, promote word-of-mouth communication and brand image enhancement. At the same time, customer service can also help enterprises understand consumer needs and market changes, and provide an important reference for corporate strategy development.

5.1.2 Environmental Performance has a Positive Impact on Corporate Competitiveness of Byhealth Co., Ltd

The environmental performance of Byhealth Co., Ltd. has a strong positive correlation to the competitiveness of enterprises. In the correlation analysis in Table 4.5, the correlation coefficients among resource utilization efficiency, waste reduction degree, environmental protection policy implementation and sustainable development capacity all show significant positive correlation. These data show that the efficiency of resource use, the degree of waste reduction, the implementation of environmental protection policies and the ability to sustainable development are closely related to the competitiveness of enterprises. In the regression analysis in Table 4.6, environmental performance is also proved to play an important role in the improvement of enterprise competitiveness. The standardization coefficient of policies and regulations is 0.638,

and the competitiveness of enterprises will be increased by 0.638 units for each unit increase. At the same time, the regression model can explain 47.6% of the change in firm competitiveness. To sum up, environmental performance is an important factor that affects the competitiveness of enterprises.

With continuous improvement of environmental awareness, the environmental performance of enterprises has gradually become an important concern of consumers and governments. Corporate environmental performance can not only help enterprises avoid environmental risks and reduce environmental costs, but also improve corporate image and brand reputation. Companies with good environmental performance not only have a higher sense of social responsibility, but also attract more consumers and investors.

5.1.3 Business Processes have a Positive Impact on Corporate Competitiveness of Byhealth Co., Ltd

According to the results in Table 4.7, there is a significant positive correlation among energy consumption, raw material handling and storage efficiency and information transfer efficiency in the business processes of Byhealth Co., Ltd. The correlation coefficients are 0.820**, 0.827** and 0.811**, respectively. Optimizing these aspects can improve the competitiveness of enterprises. Meanwhile, in the regression analysis in Table 4.8, the standardization coefficient of business processes is 0.616, and the competitiveness of enterprises will be increased by 0.616 units for each unit of business process improvement. It can be seen that the contribution of business processes to enterprise competitiveness is very important. The regression model can explain 43.1% of the change of enterprise competitiveness, indicating that there is a significant correlation between business processes and enterprise competitiveness.

Good business process is one of the key factors in the survival of the fittest. By optimizing business processes, enterprises can improve production efficiency, reduce costs, improve quality, and make enterprises more agile and competitive. Good business processes allow companies to operate more coherently and creatively, and better adapt to market conditions and needs. Therefore, business processes play an important role in the success and competitiveness of enterprises. Especially in today's rapidly changing market environment, enterprises need to constantly carry out business process innovation and optimization in order to be able to remain invincible in the market competition. At the same time, excellent business processes can also improve the satisfaction and work efficiency of employees, and enhance the team cohesion and competitiveness of enterprises. Therefore, enterprises should pay close attention to and optimize the business process, so as to improve the competitiveness of enterprises and achieve greater success in the market.

5.1.4 Social Responsibility has Positive a Impact on Corporate Competitiveness of Byhealth Co., Ltd

According to the data analysis results in Table 4.9 and Table 4.10, there is a significant positive correlation between the fulfillment of social responsibility of Byhealth Co., Ltd. and the implementation of employee health and safety policy, the fulfillment of social responsibility of suppliers and the fulfillment of responsibility for community environmental impact, indicating that the fulfillment of corporate social responsibility is closely related to all aspects of the enterprise. Including employee welfare, supplier cooperation, and community environmental impact. The influence coefficient of social responsibility on enterprise competitiveness is 0.754, and the standardization coefficient (Beta) is 0.740, indicating that the overall significance of the model is high, and social responsibility has a significant positive impact on the enterprise competitiveness of Byhealth Co., Ltd.

Social responsibility has an important impact on the competitiveness of enterprises. By actively fulfilling social responsibilities, companies can enhance their brand image, reputation and credibility, thereby enhancing market competitiveness and achieving long-term development. Therefore, Byhealth Co., Ltd. should attach importance to the fulfillment and promotion of social responsibility, and actively take measures to fulfill social responsibility in order to enhance its corporate competitiveness and achieve sustainable development. At the same time, enterprises should also pay attention to the research and development and application of management technology, constantly innovate and improve, in order to adapt to changes in the market and customer demand, to achieve sustainable development.

5.2 Recommendation

1. Establish green supply chain management awareness and culture.

In order to ensure the positive relationship between green supply chain management and corporate competitiveness of Byhealth Co., Ltd., it is necessary to construct it from the level of consciousness and culture. This means that from the top to the grass-roots employees, this paper should deeply understand the importance of green supply chain management and regard it as the core competitiveness of the long-term development of enterprises.

High-level leadership: The high-level enterprise should make clear the strategic direction of green supply chain management, formulate specific policies and objectives for it, and ensure the input of resources.

Staff training: provide training on green supply chain management for middle and grass-roots staff, so that they can embody this concept in their daily work.

Cultural construction: promote the formation of green supply chain management

culture through internal activities and publicity, and make it the core values of enterprises.

2. Strengthen supplier cooperation and management.

Supplier is a key link in green supply chain management. In order to ensure the implementation effect of green supply chain management, Byhealth Co., Ltd needs to establish a stable cooperative relationship with suppliers and manage them effectively.

Supplier selection: In selecting suppliers, besides traditional factors such as price and quality, this paper should also focus on their performance in environmental protection and social responsibility.

Cooperation agreement: when signing a contract with a supplier, clarify the rights and obligations of both parties in environmental protection and social responsibility, and ensure that the supplier can produce according to the requirements.

Supplier supervision: evaluate suppliers regularly to ensure that they always meet the requirements of green supply chain management. For suppliers who do not meet the requirements, take corresponding punishment measures and even consider terminating the cooperation.

3. Continuously innovate green technologies and management methods.

With the progress of science and technology and the change of market, the methods and technologies of green supply chain management also need to be constantly innovated. Only in this way, Byhealth Co., Ltd can ensure that he always maintains a leading position in the competition.

Technology R&D: Increase investment in R&D of green technologies, such as clean energy and resource recovery, so as to reduce the environmental impact in the production process.

Innovation of management methods: learn from advanced green supply chain management methods at home and abroad, and innovate in combination with the actual situation of enterprises to improve management efficiency.

Cooperation with scientific research institutions: establish close cooperative relations with universities and scientific research institutions to jointly develop new green technologies and management methods.

To sum up, in order to ensure the positive relationship between Byhealth Co., Ltd's green supply chain management and corporate competitiveness, it is necessary to guarantee it from four aspects: consciousness and culture, supplier cooperation and management, technological innovation and management methods, and evaluation and

supervision mechanism. Only in this way can Byhealth Co., Ltd achieve sustained and stable development in the fierce market competition with its advantages in green supply chain management.



References

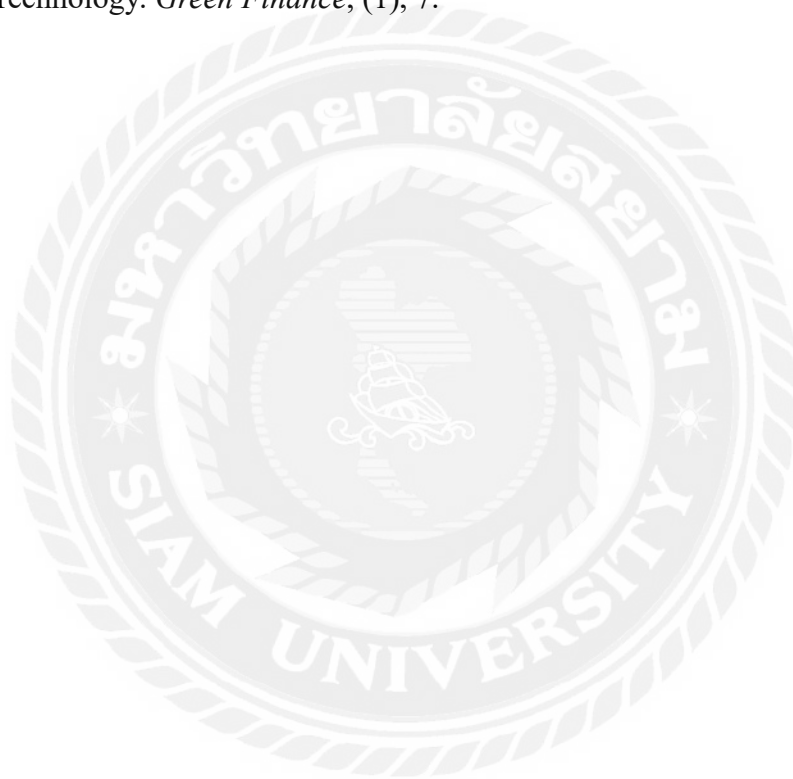
- Ali, Z. (2023). Predicting SMEs performance through green supply chain practices: a mediation model link of business process performance. *Asia Pacific Journal of Marketing and Logistics*, 35(2), 432-450.
- Association, I. R. M., Sirkka, A., & Junkkari, M. (2013). Multidimensional analysis of supply chain environmental performance. In W.-C. Hu & N. Kaabouch (Eds.), *Sustainable ICTs and management systems for green computing* (pp. 1–20). IGI Global. <https://doi.org/10.4018/978-1-4666-2625-6.ch001>.
- Camilleri, M. A. (2018). Nurturing travel and tourism enterprises for economic growth and competitiveness. *Tourism and Hospitality Research*, 18(1), 123-127.
- Cao, Y. H. (2021). The impact of supply chain collaboration on operational performance. *China Circulation Economy Editorial Department*, (2013-3), 44-50.
- Chen, C.F. (2022). *Education for Sustainable Development: Theory, Practice and Evaluation*. Educational Science Press.
- Chen, J. N. (2021). Working capital management efficiency and corporate performance analysis. Modern economic information, *Modern economic information*, 10, 45–52.
- Chen, J.W., & Zhang, H. (2021). Diseconomies of scale in Retail enterprises: A Panel data analysis based on firm characteristics and competitive environment. *China Circulation Economy Editorial Department*, (2013-3), 76-82.
- Cherrafi, A., Kumar, V., Mishra, N., & Elfezazi, S. (2018). Lean, green practices and process innovation: A model for green supply chain performance. *International Journal of Production Economics*, 206, 79-92.
- Costantini, V., Crespi, F., Marin, G., & Paglialonga, E. (2017). Eco-innovation, sustainable supply chains and environmental performance in European industries. *Journal of Cleaner Production*, 155, 141-154.
- Ding, J.F. (2022). Supply chain Reunderstanding. *Photocopying news study materials: Logistics Management*, (12), 12.
- Ehinomen, C., & Adeleke, A. (2012). Strategies for re-positioning small and medium scale enterprises in Nigeria for global competitiveness. *Journal of Business Management and Economics*, 3(7), 266-274.
- Fang, X. M., & Guo, L. L. (2021). Rethinking and reconstruction of sustainable development theory. *Journal of Environmental Management*, 295, 113081.
- Gao, X. H. (2019). Chinese enterprises' core competitiveness enhancement in international economic and trade. *International Journal of Business and Management*, 14(12), 123–135.
- Golovchenko, O., Saiensus, M., & Liu, L. (2022). Management of efficiency and competitiveness of enterprises. *Journal of Competitiveness*, 14(3), 50–65.

- Gong, X. W. (2018). Tomson BiHealth: How to build a competitive advantage in the supply chain of health care products industry? *Import and Export Managers*, (4), 2.
- Govindan, K., Kaliyan, M., & Kannan, D. (2014). Barriers analysis for green supply chain management implementation in Indian industries using analytic hierarchy process. *International Journal of Production Economics*, 147(4), 555-568.
- Guo, Y.T, Li, C.C., & Bai, S.J. (2015). Design of green supply chain management process for study making enterprises based on synergy theory. *Value Engineering*, 34(3), 3.
- Han, Y. (2020). *Research on Green Supply chain decision-making and Coordination considering Corporate Social Responsibility under Government subsidy*. (Doctoral dissertation, Hunan University).
- Hitchcock, L. (2012). A comparative study of consumer preferences in the United States and China. *Journal of Consumer Research*, 39(2), 451-470.
- Hsueh, C. F. (2015). A bilevel programming model for corporate social responsibility collaboration in sustainable supply chain management. *Transportation Research Part E: Logistics and Transportation Review*, 73, 84-95.
- Huang, A.P. (2019). Research on financial operation efficiency of listed companies in engineering consulting industry based on DEA. *Chief Accountants of China* (11), 2.
- Huang, X. Y. (2020). Green supply chain, supply network and environmental performance analysis. *Sustainability*, 12(15), 6050.
- Jaggernath, R., & Khan, Z. (2015). Green supply chain management. *World Journal of Entrepreneurship, Management and Sustainable Development*, 11(1), 37-47.
- Jin, B., & Gong, J.J. (2014). Economic trend, policy regulation and its impact on Enterprise competitiveness: An empirical analysis based on Chinese industry panel data. *Chinese Industrial Economy*, (3), 13.
- Khan, S. A. R., Dong, Q., Zhang, Y., & Khan, S. S. (2017). The impact of green supply chain on enterprise performance: In the perspective of China. *Journal of Advanced Manufacturing Systems*, 16(03), 263-273.
- Khyareh, M. M., & Rostami, N. (2018). Competitiveness and entrepreneurship, and their effects on economic growth. *Journal of Entrepreneurship, Business and Economics*, 6(2), 1–20.
- Korez-Vide, R., & Tominc, P. (2016). Competitiveness, entrepreneurship and economic growth. *Competitiveness of CEE Economies and Businesses: Multidisciplinary Perspectives on Challenges and Opportunities*, 25-44.
- Kot, S. (2018). Sustainable supply chain management in small and medium enterprises. *Sustainability*, 10(4), 1143.

- Laari, S., Toyli, J., Solakivi, T., & Ojala, L. (2016). Firm performance and customer-driven green supply chain management. *Journal of cleaner production*, 112, 1960-1970.
- Li M. (2018). *Green innovation based on supply chain and its impact on firm Performance and Competitive advantage*. (Doctoral dissertation, South China University of Technology).
- Li X M. (2018). *Research on Pricing and service coordination of fresh e-commerce supply chain under competitive environment*. (Doctoral dissertation, Zhejiang Gongshang University).
- Li, G., Wang, X., Su, S., & Su, Y. (2019). How green technological innovation ability influences enterprise competitiveness. *Technology in Society*, 59, 101136.
- Li, K.R & Wang, Y.Q. (2022). Green petrochemical supply chain performance evaluation system based on grey clustering method. *Science and Management*, 24(3), 88-98.
- Li, L. Z., Liu, Y., & Wang, H. (2021). Promoting the transformation and upgrading of traditional industries through sustainable supply chain innovation. *Journal of Cleaner Production*, 278, 123456.
- Liu, J.W. (2022). How to effectively improve the market competitiveness of enterprise economic management. *Modern Enterprise*, (8), 9-11.
- Lu R H, & Li N. (2015). Closed-loop supply chain pricing and coordination from the perspective of environmental performance. *Industrial Engineering*, 18(5), 6.
- Lv, J.Q. (2012). On enterprise competitiveness and sustainable development. *Entrepreneur World: Mid-ten*, (10), 1.
- Mantje, M. P., Rambe, P., & Ndofirepi, T. M. (2023). Effects of knowledge management on firm competitiveness: The mediation of operational efficiency. *South African Journal of Information Management*, 25(1), 1549.
- Mathu, K. (2021). Green initiatives in supply chain management drive enterprises' competitiveness and sustainability. *South African Journal of Business Management*, 52(1), a2345.
- Naoui, F. (2014). Customer service in supply chain management: a case study. *Journal of Enterprise Information Management*, 27(6), 786-801.
- Nguyen, T., Tran, T., Luong, T., & Luu, K. (2022). The effect of corporate social responsibility on green supply chain management and firm performance. *Uncertain Supply Chain Management*, 10(3), 807-818.
- Omar, H., Ali, M., & Jaharadak, A. (2019). Green supply chain integrations and corporate sustainability. *Uncertain Supply Chain Management*, 7(4), 713-726.
- Panasenko, W. E., Boginya, M. V., Vlasova, T. G., & Zhukova, Z. S. (2020). A technical service system to increase business efficiency and competitiveness. In *Frontier Information Technology and Systems Research in Cooperative Economics*, 705-714.

- Pang, K.T Qian, H.M., & Shen, L.Y. (2022). Corporate Social Responsibility, Corporate Reputation and corporate Sustainability. *Advances in Applied Mathematics*, 11(10), 11.
- Pei, L.L. (2020). Economic demonstration of cash discount theory in supply chain. *Logistics Technology*, 43(9), 2.
- Qian, Y.Z. (2023). Discussion on the application of management strategies aimed at improving enterprise operation efficiency. *Economic and Technical Cooperation Information*, (5), 0046-0048.
- Schaefer, J. L., Baierle, I. C., Sellitto, M. A., Siluk, J. C. M., Furtado, J. C., & Nara, E. O. B. (2021). Competitiveness scale as a basis for Brazilian Small and Medium-Sized Enterprises. *Engineering Management Journal*, 33(4), 255-271.
- Shi S S. (2017). A brief discussion on enterprise development and environmental protection. *Technology Wind*, (15), 1.
- Tuni, A., Rentizelas, A., & Duffy, A. (2018). Environmental performance measurement for green supply chains: A systematic analysis and review of quantitative methods. *International Journal of Physical Distribution & Logistics Management*, 48(8), 765-793.
- Tang, Y.Y. (2018). The core competitiveness of Shanghai economy from the perspective of the new round of Top 100 enterprises. *Shanghai Enterprises*, (9), 3.
- Verma, D., Dixit, R. V., & Singh, K. (2018). Green supply chain management: A necessity for sustainable development. *International Journal of Applied Engineering Research*, 13(10), 7648–7655.
- Wang P. (2022). Research on dual-channel supply chain considering service expectation. *Logistics Engineering and Management*, 44(3), 64-66.
- Wang, C., Zhang, Q., & Zhang, W. (2020). Corporate social responsibility, Green supply chain management and firm performance: The moderating role of big-data analytics capability. *Research in Transportation Business & Management*, 37, 100557.
- Wang, H.B, & He, N.X. (2018). Construction of corporate social responsibility internal control system for green supply chain management. *Contemporary Economic Management*, 40(3), 6.
- Wang, J., & Dai, J. (2018). Sustainable supply chain management practices and performance. *Industrial Management & Data Systems*, 118(1), 2-21.
- Xu, Z. J. (2017). The relationship between enterprise scale and enterprise competitiveness: A case study of arm and Walmart. *Western Leather*, 39(10), 1.
- Yang, Y. Q. (2014). *Research on operation efficiency evaluation of power generation enterprises under low-carbon background*. (Doctoral dissertation, North China Electric Power University).

- Yanton-Drozdovska, E. (2020). International competitiveness of the enterprise. *The Actual Problems of Regional Economy Development*, 2(16), 10-17.
- Ying, J., & Li-jun, Z. (2012). Study on green supply chain management based on circular economy. *Physics Procedia*, 25, 1682-1688.
- Zelga, K. (2017). The importance of competition and enterprise competitiveness. *World Scientific News*, (72), 301-306.
- Zhang, L. (2018). Sustainable Development theory: Conceptual evolution, dimensions and Prospects. *Proceedings of Chinese Academy of Sciences*, 33(1), 10.
- Zhou, S.M., & Luo, W.X. (2021). Corporate Social Responsibility fulfillment Mechanism based on Green supply chain: A case study of Goldwind Technology. *Green Finance*, (1), 7.



Appendix

Questionnaire survey

A Questionnaire Survey on the Relationship between Supply Chain Management and Corporate Competitiveness in Byhealth Co., Ltd

Dear Ladies /Gentlemen,

In recent years, with the increasing awareness of sustainable development and environmental protection, green supply chain management has gradually become an important part of the core competitiveness of enterprises. The purpose of this questionnaire is to understand your views and cognition on the relationship between supply chain management and corporate competitiveness in Byhealth Co., Ltd. Your opinions and opinions are very important for our research, which will help us to know more about the implementation effect of green supply chain management in reality and the improvement of corporate competitiveness. The answers to the questionnaire will be treated in strict confidentiality and will only be used for statistical analysis. Thank you for taking time out of your busy schedule to fill in this questionnaire!

I. Basic information

1. Your gender: male female.
2. Your age: under 25 years old 26-35 years old 36-45 years old 45 years old or above.
3. Your occupation: management personnel, technical research and development personnel, logistics personnel and sales personnel.
4. Your employment time: 2 years or less 3-5 years 6-8 years 8 years or more.

II. The Green Supply Chain Management Survey Scale

This scale lists four main aspects related to green supply chain management: customer service, environmental performance, business process and social responsibility. For each aspect, five options are listed, namely, (1)very agree, (2) agree, (3) general ,(4) disagree and (5) very disagree. Please answer according to the real situation.

Primary index	Secondary index	Option				
		1	2	3	4	5
Customers Service	The order fulfillment quality of our company is very high.					

	Our company can always deliver the goods within the promised time.					
	There are few problems with our products and services, and problems can be solved quickly.					
Environmental Performance	There are few problems with our products and services, and problems can be solved quickly.					
	Our company has been trying to reduce the waste in the production process.					
	Our company has been actively promoting environmental protection policies to protect the environment.					
	Our company has been taking various measures to ensure the long-term development of the company.					
Business Processes	Our company has been working hard to reduce energy consumption in the production process.					
	Our company can always carry and store raw materials quickly and effectively.					
	The information of our company can always be conveyed to all departments and employees in a timely and accurate manner.					
Social Responsibility	Our suppliers have performed very well in protecting employees' rights and interests, environmental protection and so on.					
	Our suppliers always follow social ethics and pay attention to social responsibility.					
	Our suppliers always committed to reducing the negative impact on the community environment and take the initiative to assume corresponding responsibilities.					

III The Corporate Competitiveness Survey Scale

This scale lists four main aspects related to green supply chain management: customer service, environmental performance, business process and social responsibility. For each aspect, five options are listed, namely, (1)very agree, (2) agree, (3) general ,(4) disagree and (5) very disagree. Please answer according to the real

situation

Primary index	Secondary index	Option				
		1	2	3	4	5
Enterprise Scale	Our company believes that sales revenue is an important indicator of business performance, and it will continue to improve to achieve long-term development.					
	Our company carefully manages its net assets to ensure financial stability, liquidity and solvency.					
	Our company's net profit level is relatively high, showing efficient operation and management capabilities.					
Economic Growth of Enterprises	Our company's sales revenue has increased steadily in the past three years, which verifies the effectiveness of market position and business strategy.					
	Our company's net profit has increased steadily in the past three years, reflecting the continuous improvement ability of management and cost control.					
Operational Efficiency of Enterprises	Our company has a high rate of return on net profit, which shows strong investment decision-making and asset allocation ability and creates more value for the company.					
	Our company's return on total assets is excellent, which shows the ability to use assets efficiently and achieve profit targets, and effectively control operational and financial risks.					
	Our company pays attention to improving the labor productivity of all employees, and enhances its competitiveness and sustainable development ability by optimizing processes, upgrading skills and introducing technology.					